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# Genetic Stock Composition of the Commercial and Sport Harvest of Chinook Salmon in Westward Region, 2014–2016

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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, $\chi^2$, 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. 16-11*

# GENETIC STOCK COMPOSITION OF THE COMMERCIAL AND SPORT HARVEST OF CHINOOK SALMON IN WESTWARD REGION, 2014–2016

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# ABSTRACT

The primary goal of this study was to estimate the stock of origin, age, size, and sex composition of Chinook salmon, *Oncorhynchus tshawytscha*, harvested in Westward Region commercial and Kodiak area sport fisheries during 2014–2016 as part of the larger statewide Chinook Salmon Research Initiative. Chinook salmon commercial and sport harvest in the Kodiak area were sampled from 2014 to 2016; however, budgetary constraints limited sampling of North Peninsula, South Peninsula, and Chignik commercial harvest to 2014. A total of 10,154 Chinook salmon tissue samples were collected from 4 commercial fishery areas and sport fisheries in the Kodiak area. Of these, 8,829 samples were genotyped to represent 25 spatiotemporal strata. Stock compositions were estimated with genetic mixed stock analysis for all strata using a comprehensive, coastwide Chinook salmon baseline with important *local* stocks defined as separate reporting groups, to the extent possible. Harvests in both the commercial and marine sport fisheries were dominated by British Columbia and West Coast U.S. stocks, followed by smaller contributions from Southeast Alaska/Northeast Gulf of Alaska, Cook Inlet, and Kodiak. Stock composition estimates were consistent among strata within commercial and marine sport harvests, although there were differences between these fisheries. In the annual commercial harvest, over 50% of the fish were from British Columbia and over 30% of the fish were from the West Coast U.S. In the marine sport fishery, the relative abundance of British Columbia and West Coast U.S. fish varied, but jointly represented over 80% of annual harvest. In both the commercial and sport fisheries, the annual harvest of Kodiak-origin Chinook salmon was below 5% of the total harvest. These results provide the most comprehensive estimates of stock composition and stock-specific harvests of Chinook salmon in the Kodiak area, supplement previous studies, and should inform fishery management and regulatory decision makers.

Key words: Kodiak, KMA, Chinook salmon, *Oncorhynchus tshawytscha*, mixed stock analysis, MSA, genetic baseline, SNP, CSRI, Chignik, South Peninsula

# INTRODUCTION

## BACKGROUND

Chinook salmon *Oncorhynchus tshawytscha* spawn in freshwater but migrate to the ocean to grow and attain maturity (anadromy). Chinook salmon have 2 primary life histories, characterized as *ocean-type* or *stream-type*. *Ocean-type* fish immediately migrate to the ocean the year of emergence from the gravel whereas *stream-type* fish typically rear in freshwater for 1 year prior to outmigration. Chinook salmon of both life history types spend between 1 and 5 years in the ocean before returning to spawn in their natal stream (Healy 1991). The *stream-type* life history dominates in Alaska, whereas the *ocean-type* life history is more common in the southern extent of the species' range (Healy 1991). The Gulf of Alaska is within the migratory pathway of and furnishes feeding habitat for Chinook salmon throughout North America (Major et al. 1978; Larson et al. 2012; Guyon et al. 2015).

### Chinook Salmon Harvest in Westward Region Commercial Fisheries

Chinook salmon are commercially harvested incidentally to directed sockeye *O. nerka*, pink *O. gorbuscha*, coho *O. kisutch*, and chum *O. keta* salmon commercial fisheries within Alaska Department of Fish and Game (ADF&G) Westward Region's Kodiak (Area K), Chignik (Area L), and Alaska Peninsula (Area M) management areas (Figure 1).

In the Kodiak Management Area (KMA), Chinook salmon spawn in 7 known streams (Jackson and Keyse 2013). Chignik River is the only substantial Chinook salmon system in the Chignik Management Area (Wilburn and Stumpf 2016), and so far, 16 different streams within the Alaska Peninsula Management Area (Witteveen and Shedd 2016) have had baseline genetic tissues collected. Only 4 major Chinook salmon systems are monitored via salmon counting weirs throughout the Westward Region (Ayakulik, Chignik, Nelson, and Karluk rivers).

The average commercial Chinook salmon harvest from 2004 to 2013 was 18,703 fish in Kodiak, 3,684 fish in Chignik, and 10,880 fish in Alaska Peninsula (Table 1). Since the mid-1990s harvest of Chinook salmon in the marine waters of the Westward Region has been fairly consistent (Figure 2). However, Chinook salmon escapement estimates at the major systems monitored via weir have demonstrated substantial reductions since 2005 (Figure 3), often struggling or failing to reach their respective escapement goals (Munro and Volk 2013).

In 2010, the Karluk River Chinook salmon system was designated a stock of management concern by the Alaska Board of Fisheries (BOF). As a result, the BOF prohibited commercial retention of Chinook salmon greater in size than 28 inches in the Southwest portion of Kodiak Island stretching from Cape Kuliuk to Low Cape from June 1 to July 5 (seine gear only). The intent was to preserve Chinook salmon bound for Karluk and Ayakulik rivers. In 2013, KMA experienced a high commercial Chinook salmon harvest of about 34,000 fish. This figure was the highest since 1993 when over 41,000 Chinook salmon were harvested (Table 1); however, that came at a time when Kodiak Chinook salmon escapement was over 22,000 fish (Figure 3). During the 2013 BOF meeting the Chinook salmon nonretention policy was expanded to include all of KMA from June 1 to July 5 (seine gear only) and extended for the entire season in the Southwest portion of Kodiak Island stretching from Cape Kuliuk to Low Cape. The intent of the board's decision was not only to preserve escapement of Chinook salmon to Karluk and Ayakulik rivers, but also to preserve Chinook salmon stocks from elsewhere in Alaska.

## Chinook Salmon Harvest in Kodiak Regulatory Area Sport Fisheries

Chinook salmon are harvested in sport fisheries both in fresh and salt waters in Kodiak and the Alaska Peninsula (Figure 4). Directed freshwater sport harvests occur in the Kodiak Regulatory Area (KRA) on wild stocks in Karluk and Ayakulik rivers, as well on Karluk River-origin hatchery fish returning to Monashka and Salonie creeks and Olds and American rivers. Chinook salmon are harvested in marine waters throughout the Kodiak Archipelago, but the majority of fish harvested come from Chiniak, Marmot, and Ugak bays due to their proximity to the city of Kodiak. Other significant harvests occur near the village of Old Harbor, Larsen Bay, and the waters surrounding Afognak Island. Harvest of Chinook salmon occurs by both guided and unguided anglers; however, the majority of unguided effort occurs near the Port of Kodiak, and much of the harvest in remote areas is guided.

Sport harvests of Chinook salmon occur in fresh water in the Alaska Peninsula Aleutian Islands Regulatory Area (APAIRA) in the Chignik River on the south side of the Alaska Peninsula, and in North and Black Hills creeks and Steelhead, Sapsuk, Bear, Cinder, and Meshik rivers on the north side of the Alaska Peninsula. There is little saltwater effort on Chinook salmon in the APAIRA.

Chinook salmon harvests in the freshwater areas of KRA and APAIRA have been drastically lower during the past decade. Freshwater sport fisheries have been restricted at Karluk and Ayakulik rivers annually since 2005 either through bag limit reductions or sport fishery closures.

Saltwater Chinook salmon harvests in the KRA have averaged 8,304 fish in the last 10 years (2006–2015) according to ADF&G's Statewide Harvest Survey (Table 2). Harvests of Chinook salmon in Kodiak salt waters are variable from year to year but have generally been declining since 2007, when they reached a peak of 10,626 fish. The marine Chinook salmon sport fishery is managed by a management plan adopted by the Board of Fisheries in 2005 and amended in 2008. A guideline harvest level is in place with options for restriction of the fishery that could be

implemented by the board if the guideline harvest level is exceeded. To date, no restrictions have been needed or implemented.

## CHINOOK SALMON RESEARCH INITIATIVE

Decreased returns of Chinook salmon in the region and throughout Alaska have prompted statewide concern about the health of Chinook salmon stocks (ADF&G Chinook Salmon Research Team 2013). To address these concerns, the Chinook Salmon Research Initiative (CSRI) implemented stock assessment programs targeting 12 indicator stocks from around the state, including the Karluk and Chignik rivers. In addition to basic research estimating adult spawning abundances and juvenile abundance in these indicator streams, 2 of the major knowledge gaps identified by the CSRI were the species' migratory pathways at sea, and the stock of origin in fishery catches. A coded wire tag (CWT) recovery study in the Kodiak marine waters in 1994 (Swanton 1997), and from 1997 to 1999 (Clark and Nelson 2001) showed hatchery stocks from British Columbia, Alaska, and Pacific Northwest dominated in adipose finclipped Chinook salmon sampled. These findings were similar to observer-examined CWT Chinook salmon recovered from foreign trawl and research vessels in international waters near Kodiak and the South Alaska Peninsula during the 1980s through the early 2000s (Myers et al. 2004), and genetic analysis of the same sources of samples from 2005 to 2011 (Larson et al. 2012). Genetic analysis of Bering Sea Chinook salmon trawl bycatch from 2005 to 2010 showed the presence of primarily Alaska, British Columbia, and Pacific Northwest stocks (Guyon et al. 2010a, b; Templin et al. 2011; Guthrie et al. 2012); however, of regional interest was the significant presence of North Alaska Peninsula Chinook salmon stocks (14–27%).

The Western Alaska Salmon Stock Identification Program (WASSIP), conducted from 2006 to 2009, was an objective measure of determining the stock of origin of chum and sockeye salmon caught in the inshore commercial salmon fisheries of western Alaska. To determine the stock of origin, WASSIP utilized genetic mixed stock analysis (MSA; Eggers et al. 2011). Stock compositions and stock-specific harvests and harvest rates were reported in 2012 (Dann et al. 2012b; Habicht et al. 2012a; Munro et al. 2012; Templin et al. 2012). However, MSA of the Chinook salmon catch in the Westward Region commercial salmon fisheries has never been conducted. Scientific knowledge of the temporal and spatial presence of both *local* and *nonlocal* Chinook salmon in these catches is of regional, statewide, and international importance. Currently, these harvests cannot be reliably attributed to *local* wild stocks, hatchery stocks, or *nonlocal* wild stocks.

## CURRENT RESEARCH PROJECT

The principal objective of this project was to sample Chinook salmon commercial and marine sport fisheries in the Westward Region and use genetic mixed stock analysis (MSA) to estimate stock compositions and stock-specific harvest, specifically to quantify the harvest of Alaska indicator stocks (ADF&G Chinook Salmon Research Team 2013). ADF&G developed a comprehensive, coastwide genetic baseline for MSA based on Templin et al. (2011) with additional collections from Barclay and Habicht (2015) and Witteveen and Shedd (2016) to estimate the stock compositions of Chinook salmon harvests in the Westward Region commercial salmon fisheries (Foster and Dann 2014, 2015) and Kodiak sport marine fisheries (Tracy and Dann 2014; Tracy and Shedd 2015) from 2014 to 2016 (Table 3; Figures 5–6). There are 10 reporting groups in this study: 1) Russia, 2) Eastern Bering Sea, 3) North Alaska Peninsula, 4) Chignik, 5) Kodiak, 6) Cook Inlet, 7) Copper, 8) Southeast Alaska, 9) British

Columbia, and 10) West Coast US (Table 3; Figures 5–6). The final baseline contains 29,001 individuals from 403 collections representing 211 populations in 10 reporting groups. The Chignik group corresponds to one of CSRI's 12 indicator stocks, whereas another (Karluk River) is included within the Kodiak group.

## Commercial Fisheries

The experimental design for the commercial fisheries component of this project is laid out in 2 Operational Plans (Foster and Dann 2014, 2015). The principal objective of this effort was to sample Chinook salmon commercial harvest in marine waters of the Westward Region. In 2014, the first year of this project, sampling of Chinook salmon in the commercial salmon fisheries of the Westward Region took place in the ports of Kodiak, Larsen Bay, and Alitak in KMA, Chignik in the Chignik Management Area, and Sand Point, King Cove, and Port Moller in the Alaska Peninsula Management Area. A total of 2,201 fish were sampled for age, sex, and length information and genetic tissue during the early strata and 2,908 fish were sampled during the late strata (Appendix A).

Due to reduction in the budget for CSRI, in late 2014, CSRI cut the Alaska Peninsula- and Chignik-based portions of this project (although a subsample of the original plan was ultimately analyzed; ADF&G Chinook Salmon Research Team 2013). As a result, the scope of this project was reduced to collect genetic tissue and age, sex, and length data from Chinook salmon harvested in the commercial salmon fisheries in the Kodiak area only during the 2015 and 2016 seasons.

Designated sampling areas in KMA encompass districts or partial districts as outlined below in Sampling Area Descriptions and are based on geographic location, harvest magnitude, and management, with consideration given to port delivery location. Overall, 2 general temporal strata were chosen (early and late). The early stratum (~June) coincides with the commercial fisheries targeting early-run sockeye salmon. The late stratum (~July) coincides with the commercial fisheries targeting early-run sockeye and/or pink and chum salmon (Table 4).

### *Sampling Area Descriptions*

Sampling areas defined in this project were Northwest Kodiak/Afognak, Southwest Kodiak/Alitak, Eastside Kodiak/Afognak, and Mainland (Figure 7). District numbers represented within each sampling area are represented in Table 4. All were sampled during the early and late strata.

#### Northwest Kodiak/Afognak (251, 253, 254)

This area stratum consists of the Northwest Kodiak District and the western portions of the Afognak District (Figure 7), and includes statistical areas 251, 253, and 254. Both purse seine and set gillnet gear can be used in the majority of the Northwest Kodiak District, but Afognak District is limited to seine gear only. This area historically represents the largest Chinook salmon harvests in KMA. Samples for Northwest Kodiak/Afognak were collected at the processing plants in Larsen Bay and Kodiak.

#### Southwest Kodiak/Alitak (255, 256, 257)

This area stratum consists of the Southwest Kodiak and Alitak districts (Figure 7) and includes statistical areas 255, 256, and 257. Only seine gear can be used in Southwest Kodiak District and this district contains fishing areas terminal to Karluk and Ayakulik rivers. Both seine and set

gillnet gear can be used in Alitak district but are segregated by sections within the district. Samples for Southwest Kodiak/Alitak were collected at the processing plants in Larsen Bay, Kodiak, and Alitak.

**Eastside Kodiak/Afognak (258, 259, 252)**

This area stratum consists of the Eastside Kodiak District, eastern portions of the Afognak District, and western portions of the Northwest Kodiak District (Figure 7), and includes statistical areas 258, 259, and 252. A majority of this sampling area is limited to seine gear only but there is a gillnet area in statistical area 259 of the Northwest Kodiak District. Samples for Eastside Kodiak/Afognak were collected at the processing plants in Kodiak and Alitak.

**Mainland (262)**

This area stratum is the Mainland District (Figure 7), statistical area 262. Only seine gear can be used in this area. Samples for Mainland were collected at the processing plants in Kodiak, Larsen Bay, and Alitak.

### Sport Fisheries

The experimental design for the sport fisheries component of this project is outlined in 2 Operational Plans (Tracy and Dann 2014; Tracy et al. 2015). The primary objectives were to estimate the stock composition, stock-specific harvest, and age composition of Chinook salmon harvests for the KRA marine recreational fishery. Initially in 2014, samples were to be taken at the Port of Kodiak and in the village of Larsen Bay; however, a reduction in budget and number of samplers resulted in sampling only harvests landed at the Port of Kodiak during 2015 and 2016. Due to the low availability of samples, each year had a single spatiotemporal stratum to represent the entire Kodiak Archipelago (Figure 4). Samples collected from Larsen Bay in 2014 are included in the pooled samples for the entire Kodiak Archipelago.

## OBJECTIVES

The overall goal of this project is to provide information on commercial and marine sport harvest of Alaska Chinook salmon stocks, specifically of indicator stocks within the Westward Region (ADF&G Chinook Salmon Research Team 2013). This information 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. This document has 2 objectives:

1. Report estimated stock proportions and stock-specific harvests of Chinook salmon sampled from Kodiak area commercial fisheries, 2014–2016.
2. Report estimated stock proportions of Chinook salmon sampled from Kodiak area sport fisheries, 2014–2016.

In addition, we report the estimated stock proportions of Chinook salmon sampled from South Peninsula and Chignik commercial fisheries in 2014 (Appendix B).

## 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.

*Coded Wire Tag (CWT).* A small magnetized wire, placed in the snout of fish to identify its stock of origin. Often hatchery fish are implanted with CWTs but some wild stocks are tagged as well. Typically the adipose fin of a tagged fish is clipped to give an external indication of the presence of a CWT.

*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)).

*F-statistics*. Measures used to partition genetic diversity within and among populations in a hierarchical fashion. Common measures include the following: $F_{IS}$, the average departure of genotype frequencies from Hardy-Weinberg expectations within populations; $F_{ST}$, the proportion of the variation due to allele frequency differences among populations; and $F_{IT}$, the departure of genotype frequencies from Hardy-Weinberg expectations relative to the entire population. In this hierarchy, subscripts refer to comparisons between levels in the hierarchy: $_{IS}$ refers to individuals within populations, $_{ST}$ to subpopulations within the total population, and $_{IT}$ to individuals within the total population. Hierarchies and subscript notation can be extended to any level to accommodate different study designs.

*Gametic Disequilibrium (or Linkage Disequilibrium)*. A state that exists in a population when alleles at different loci are not distributed independently in the population's gamete pool, often because the loci are physically linked.

*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 management area where it is caught.

*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.

*Nonlocal*. A salmon stock originating outside of the management area where it is caught.

*Ocean-type*. The life history form of Chinook salmon which migrates seaward immediately following emergence. This life history form is predominant in the species' southern range (Healy 1991; Quinn 2011).

*Polymerase Chain Reaction (PCR)*. A method to amplify 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, a run 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.

*Stream-type*. The life history form of Chinook salmon which spends its first year after emergence in freshwater before migrating seaward. This life history form is predominant in the species' northern range (Healy 1991; Quinn 2011).

# METHODS

## GENETIC TISSUE SAMPLING

### Commercial Fisheries

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 each stratum proportional to the daily catches. This ensures that the stock compositions estimated from the MSA analysis are representative of the catch in the stratum. 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.

Chinook salmon tissue samples (pelvic fin axillary processes from the left side of fish) were collected by individual sampling procedures. In these procedures, sampled tissues from each fish were placed in individual, ethanol-filled cryovials with a unique individual sample number to allow pairing with age, sex, and length and CWT data. Samplers obtained fish ticket information before collecting samples to determine whether 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.

### Sport Fisheries

A single catch sampler collected tissue samples at 4 locations in the Port of Kodiak: a seafood processing plant, St. Paul's Harbor, St. Herman's Harbor (Dog Bay), and the U.S. Coast Guard Base recreational boating launch. During 2014, additional catch samplers were available in Larsen Bay and sport fishing harvests were collected in conjunction with sampling of the commercial catch. Due to the low number of fish available for sampling, all samples were used in the analysis and no subsampling was necessary.

The methodology for tissue collection was the same as that of the commercial sampling. When available, sport anglers were interviewed to estimate the timing of harvest and geographic distribution of effort; CWT samples were collected if the adipose fin was clipped. The majority of samples collected came from 1 seafood processor that most Kodiak-based charter boats deliver their catch to. This precluded interviewing anglers, but was a central location for sampling charter-caught Chinook salmon. Sampling was conducted throughout the sampler's shift and rotated between the 4 locations. As a further cost-saving measure, sampling on the U.S. Coast Guard Base was limited due to the time and fuel needed to access this location.

## AGE, SEX, AND LENGTH SAMPLING

The most common method of age determination in Pacific salmon is the analysis of the concentric rings (circuli) on the scale. Scales, when possible, were collected from the preferred area of each fish following the methods described by International North Pacific Fish Commission (1963) and Welander (1940) for both commercial and sport fishery samples. Four scales per fish were collected and mounted on scale "gum" cards and impressions made on acetate/diacetate cards (Clutter and Whitesel 1956). Fish ages were assigned by examining scale impressions for annual growth increments using a microfiche reader fitted with a 48X lens following designation criteria established by Mosher (1968). Ages were recorded using European notation (Koo 1962), with a decimal separating the number of winters spent in fresh water (after emergence) from the number of winters spent in salt water. Sex was determined, normally by visual inspection of gonads and by examining the fish for secondary sexual characteristics. Length (mid eye to tail fork; METF) was measured to the nearest millimeter.

## CODED WIRE TAG SAMPLING

The presence/absence of an adipose fin clip was recorded for all Chinook salmon sampled as part of the genetics tissue sampling. Any Chinook salmon displaying an adipose clip was sampled additionally for CWT information (Foster and Dann 2014, 2015). A uniquely numbered cinch strap was attached to the head and recorded. The head was removed carefully with a utility knife. Each head, with the numbered cinch strap visible, was placed in an individual plastic bag. After tissue sampling was complete, a CWT sampling form was completed for each processor delivery (tender) if any adipose-clipped fish were present. All Chinook salmon heads collected were frozen and shipped to the ADF&G Mark, Tag, and Age Laboratory in Juneau for CWT extraction and reading.

## SELECTING GENETIC TISSUE SAMPLES FOR ANALYSIS

All genetic tissue samples were selected randomly without respect to CWT sampling. As most stocks with CWT belong to highly identifiable reporting groups, incorporating CWT samples as known marks would probably add little value to the stock composition estimates derived solely from MSA.

### Commercial Fisheries

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 fish. Samples were selected in proportion to the daily harvest that occurred. 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. Sample selection followed predetermined temporal strata as defined in the operational plans (Foster and Dann 2014, 2015).

### Sport Fisheries

Given the number of samples collected and the lack of day-specific harvest information with which to subsample proportional to harvest, all samples collected in a given year were genotyped.

## 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 (Templin et al. 2011) using 2 Fluidigm 192.24 Dynamic Array Integrated Fluidic Circuits (IFCs), each of which 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 were 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 to 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 likihood of repeated human errors. All samples were subject to the following QC protocol: re-extraction of 8% of project fish and genotyping them 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 genotype production.

## 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 2 statistical QC analyses to ensure that only quality genotypic data was 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 accuracy and precision of MSA (Dann et al. 2012a).

Secondly, 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

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

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 Chinook salmon initially selected for analysis, the number genotyped in the laboratory, the numbers excluded for the 2 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 Chinook salmon populations and the reporting groups into which the populations were combined are described in Templin et al. (2011).

### *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) according to WASSIP methods, such that the prior for each subsequent temporal mixture was equal to the stock compositions from the preceding 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 influences of the 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 simulation by resampling 100,000 draws of the posterior output from each of the constituent temporal strata and applying the harvest to the draws.

# RESULTS

## GENETIC TISSUE SAMPLING

### Commercial Fisheries

Commercial Chinook salmon fisheries in KMA were sampled in 2014–2016. Approximately 9,014 Chinook salmon samples were collected in 22 spatiotemporal strata over the 3 years of sampling (Table 4).

#### *Northwest Kodiak/Afognak (251, 253, 254)*

Two temporal strata were targeted for sampling each year in the Northwest Kodiak/Afognak sampling area (Figure 7). Target sampling objectives (380 fish) were achieved in both strata for all years (Table 4). All strata were fished. Details of the sampling (i.e., daily tabulation of catch, samples collected, samples selected) for each of the years and temporal strata that were sampled and selected for MSA analysis are provided in Appendix C1–C2.

### *Southwest Kodiak/Alitak (255, 256, 257)*

Two temporal strata were targeted for sampling each year in the Southwest Kodiak/Alitak sampling area (Figure 7). The target sampling objectives were achieved in 2 out of the 6 strata due to low harvest, but sufficient numbers (>250) were achieved to conduct analysis (Table 4). All strata were fished. Details of the sampling (i.e., daily tabulation of catch, samples collected, samples selected) for each of the years and temporal strata that were sampled and selected for MSA analysis are provided in Appendix C3–C4.

### *Eastside Kodiak/Afognak (258, 259, 252)*

Two temporal strata were targeted for sampling each year in the Eastside Kodiak/Afognak sampling area (Figure 7). The target sampling objectives were achieved in 2 out of the 6 strata due to low harvest, but sufficient numbers (>250) were achieved to conduct analysis (Table 4). All strata were fished. Details of the sampling (i.e., daily tabulation of catch, samples collected, samples selected) for each of the years and temporal strata that were sampled and selected for MSA analysis are provided in Appendix C5–C6.

### *Mainland (262)*

Two temporal strata were targeted for sampling each year in the Mainland sampling area (Figure 7). The target sampling objectives were achieved in 3 out of the 6 strata due to low harvest and closed fisheries, but sufficient numbers (>250) were achieved to conduct analysis in all strata fished (Table 4). No fishing occurred in the early stratum during 2014 and 2015 (Table 4). Details of the sampling (i.e., daily tabulation of catch, samples collected, samples selected) for each of the years and temporal strata that were sampled and selected for MSA analysis are provided in Appendix C7–C8.

## Sport Fisheries

In 2014, sampling was based out of both Kodiak and Larsen Bay; however, in 2015 and 2016 sampling was solely based in Kodiak. A total of 1,140 tissue samples were collected from sport anglers between 2014 and 2016 (Tables 4–5; Figures 8–10). These samples came from 23 statistical areas in the salt waters of the KRA, but harvests occurred throughout the Kodiak Archipelago. In 2014, 417 tissue samples were obtained from 4 locations in the Port of Kodiak (295), and Larsen Bay (122). Due to budget constraints sampling in 2015 was limited to the 4 locations in the Port of Kodiak, resulting in 282 tissue samples collected. In 2016 the U.S. Coast Guard Base was cut as a sampling collection port, and 441 tissue samples were collected from the remaining 3 locations in the Port of Kodiak.

# AGE, SEX, AND LENGTH SAMPLING

## Commercial Fisheries

Estimates of age, size, sex, and percentage of adipose-clipped fish by area and stratum are found in Appendix D1–D24. The estimates of age and size are for all fish sampled from the stratum and may include additional fish that were not subsampled postseason for MSA.

### *Northwest Kodiak/Afognak (251, 253, 254)*

**Early**

In 2014, the Northwest Kodiak/Afognak sampling area Chinook salmon harvest was predominately composed of age-0.3 (38%), -0.2 (33%), and -1.2 (14%) fish in the early stratum (Appendix D1). All fish sampled from this area and timeframe averaged 595 mm in length (METF), 63.1% were female, and 7.6% had a clipped adipose fin (Appendix D2). In 2015, age-0.2 (41%), -1.2 (29%), and -0.3 (17%) Chinook salmon accounted for the majority of the harvest (Appendix D3). The average length was 604 mm. Females made up approximately 46.8% of the sampled fish, and 14.5% had a clipped adipose fin (Appendix D4). The 2016 harvest was composed of age-0.2 (31%), -0.3 (31%), and -1.2 (19%) fish (Appendix D5). The average length was 593 mm, 45.6% were female, and 9.7% had a clipped adipose fin (Appendix D6).

**Late**

The late stratum harvest in 2014 from the Northwest Kodiak/Afognak sampling area was composed primarily of age-0.2 (38%), -0.3 (25%), and -0.1 (13%) Chinook salmon (Appendix D1). The average length of all ages was 554 mm, 52% were female, and 15.8% of the fish had a clipped adipose fin (Appendix D2). Age-0.2 (44%), -0.3 (17%), and -1.2 (17%) fish were the most abundant in the 2015 late stratum (Appendix D3). Samples averaged 627 mm, were 56.0% female and 19.0% had a clipped adipose fin (Appendix D4). In 2016, the predominant age classes of the harvest from the Northwest Kodiak/Afognak area during the last stratum were age-0.2 (35%), -1.2 (24%), and -0.3 (24%) Chinook salmon (Appendix D5). The mean length of all ages was 585 mm, samples were 51.9% female, and 10.1% had a clipped adipose fin (Appendix D6).

### *Southwest Kodiak/Alitak (255, 256, 257)*

**Early**

Chinook salmon harvested in the Southwest Kodiak/Alitak sampling area during the early stratum in 2014 included predominately age-0.2 (62%), -0.3 (18%), and -1.2 (10%) fish (Appendix D7). Samples from all ages averaged 541 mm in length, 47.7% were female, and 11.1% had a clipped adipose fin (Appendix D8). In 2015, the harvests in this area were primarily age-0.2 (42%), -0.1 (17%), and -1.2 (16%) fish (Appendix D9). The mean length was 529 mm, 35.2% were female, and 15.6% had a clipped adipose fin (Appendix D10). Age-0.2 (54%) and -0.3 (23%) Chinook salmon dominated the Southwest Kodiak/Alitak area early stratum harvest in 2016 (Appendix D11). The average length of the fish sampled was 541 mm. Fish sampled were 50.8% female, and 15.5% had a clipped adipose fin (Appendix D12).

**Late**

The late stratum in 2014 was composed predominately of age-0.2 (47%) and age-0.3 (28%) Chinook salmon (Appendix D7). The average length of all ages combined was 568 mm, 47.8% of the samples were female, and 15.3% of the observed fish had a clipped adipose fin (Appendix D8). In 2015, age-0.2 (42%), -0.3 (23%), and -1.2 (15%) Chinook salmon dominated the late stratum harvest in the Southwest Kodiak/Alitak area (Appendix D9). The size of all samples averaged 641 mm in length, were 68.6% female, and 15.1% had a clipped adipose fin (Appendix D10). Age-0.3 (36%), -0.2 (34%), and -1.2 (14%) fish accounted for the majority of the Chinook salmon harvest in the Southwest Kodiak/Alitak area during the 2016 late stratum (Appendix

D11). Sampled fish averaged 621 mm in length, were 57.1% female, and 20.3% had a clipped adipose fin (Appendix D12).

### *Eastside Kodiak/Afognak (258, 259, 252)*

#### Early

In the Eastside Kodiak/Afognak sampling area the harvest during the early stratum of 2014 was mainly composed of age-0.2 (44%), -0.3 (19%), and -0.1 (14%) Chinook salmon (Appendix D13). Fish sampled from this area and timeframe averaged 539 mm in length, 48.3% were female, and 18.3% had a clipped adipose fin (Appendix D14). During 2015, age-0.2 (38%), -1.2 (25%), and -0.1 (13%) fish accounted for the majority of the Chinook salmon harvest (Appendix D15). Samples from all ages averaged 497 mm, were 76.6% female, and 19.8% had a clipped adipose fin (Appendix D16). Age-0.1 (54%), -0.2 (15%), and -1.1 (15%) salmon dominated the Eastside Kodiak/Afognak Chinook harvest in the early stratum of 2016 (Appendix D17). Sampled fish averaged 446 mm in length, were 53.2% female, and 19.0% of the fish had a clipped adipose fin (Appendix D18).

#### Late

The late stratum harvest in the Eastside Kodiak/Afognak sampling area in 2014 was mainly composed of age-0.2 (33%), -0.1 (21%), -0.3 (17%), and -1.2 (15%) Chinook salmon (Appendix D13). The average length for all ages combined was 536 mm, 50.5% were female, and 16.8% had a clipped adipose fin (Appendix D14). In 2015, the harvest included age-0.2 (41%), -1.2 (18%), -0.1 (11%), and -0.3 (11%) Chinook salmon (Appendix D15). The average length of all ages combined was 549 mm. The samples were 69.2% female, and 22.5% of fish had a clipped adipose fin (Appendix D16). The Chinook salmon harvest in the Eastside Kodiak/Afognak area during the late stratum was composed primarily of age-0.3 (30%), -0.2 (29%), and -0.1 (19%) fish (Appendix D17). The average length of all samples was 566, 58.4% were female, and 21.7% of the fish had a clipped adipose fin (Appendix D18).

### *Mainland (262)*

#### Early

In 2014 and 2015, no commercial fishing occurred in the Mainland area during the early stratum (Appendix D19–D22). In 2016, the early stratum catch was predominantly composed of age-0.2 (44%), -0.3 (26%), and -0.1 (14%) Chinook salmon (Appendix D23). The average length of all fish sampled was 522 mm. The observed fish were 58.3% female and 22.3% of the fish had a clipped adipose fin (Appendix D24).

#### Late

The predominant age classes for Chinook salmon harvested in the Mainland area during the late stratum of 2014 were age-0.2 (29%), age-0.3 (28%), and age-0.1 (24%; Appendix D19). The average length of all samples from this area and timeframe was 543 mm, 52.1% were female, 18.3% had a clipped adipose fin (Appendix D20). In 2015, age-0.2 (42%), -1.2 (16%), and -0.3 (15%) fish accounted for the majority of the Chinook salmon harvest in the Mainland area during the late stratum (Appendix D21). The fish averaged 598 mm in length, 60.3% were female, and 11.3% of all sampled fish had a clipped adipose fin (Appendix D22). Age-0.3 (41%) and age-0.2 (36%) Chinook salmon dominated the Mainland area Chinook salmon harvest during the late

stratum of 2016 (Appendix D23). All sampled fish averaged 581 mm in length. These fish were 53.5% female and 15.2% had a clipped adipose fin (Appendix D24).

### Sport Fisheries

Age composition proportions from sport fishery harvests in 2014 were primarily age-0.3 (41%), age-0.2 (29%), and age-1.2 (18%; Appendix E1). Chinook salmon averaged 642 mm in length (METF), were 57.9% female, and 14.3% had a clipped adipose fin (Appendix E2). In 2015, age-0.2 (43%) and age-0.3 (39%) were the dominant age classes with all other age groups contributing much smaller proportions (Appendix E3). Samples from all ages averaged 681 mm in length, were 60.5% female, and 19.8% of the samples had a clipped adipose fin (Appendix E4). Age composition proportions from 2016 were similar to 2015 with age 0.2 (31%) and age 0.3 (44%); however, contributions from age-1.2 (9%) and -1.3 (9%) were slightly higher than previous years (Appendix E5). The average length of all samples was 653 mm, 51.2% were female, and 19.5% had a clipped adipose fin (Appendix E6).

## CODED WIRE TAG RECOVERIES

### Commercial Fisheries

All fish sampled as part of the GSI project were inspected for the presence of a clipped adipose fin. The sampling rate of the total Chinook salmon commercial harvest during the project timeframe was 47.7% in 2014, 38.1% in 2015, and 48.5% in 2016 (Table 4; Appendix F). The percent of CWT recoveries from inspected commercial fishery harvests was relatively consistent from year to year (Appendix F) with 5.7% recovered during 2014, 5.8% during 2015, and 6.5% in 2016. The majority of the CWTs were from fish released in Washington, followed by British Columbia, Oregon, Alaska, and Idaho (Appendix F).

### Sport Fisheries

The percent of CWT recoveries from inspected sport fishery harvests was relatively consistent from year to year (Appendix G) with 5.8% recovered during 2014, 6.1% during 2015, and 8.7% in 2016. The majority of CWTs were from fish released in Washington, followed by British Columbia, Oregon, and Alaska (Appendix G).

## SELECTING GENETIC TISSUE SAMPLES FOR ANALYSIS

### Commercial Fisheries

#### *Northwest Kodiak/Afognak (251, 253, 254)*

Pooling of commercial fishery samples allowed estimation of stock compositions for all 6 strata (Table 4; Appendix C1–C2).

#### *Southwest Kodiak/Alitak (255, 256, 257)*

Pooling of commercial fishery samples allowed estimation of stock compositions for all 6 strata (Table 4; Appendix C3–C4). In instances where fewer than 380 samples were collected, all samples were analyzed.

#### *Eastside Kodiak/Afognak (258, 259, 252)*

Pooling of commercial fishery samples allowed estimation of stock compositions for all 6 strata (Table 4; Appendix C5–C6). In instances where fewer than 380 samples were collected, all samples were analyzed.

#### *Mainland (262)*

Pooling of commercial fishery samples allowed estimation of stock compositions for 4 of the 6 strata (Table 4; Appendix C7–C8). Fishing did not occur in the "Early" strata of 2014 and 2015, thus no samples were collected. In instances where fewer than 380 samples were collected, all samples were analyzed.

### Sport Fisheries

Due to the relatively low number of samples collected, no subsampling was required and all genetic samples collected were analyzed in each year as a single spatiotemporal stratum per year (Table 4).

## LABORATORY ANALYSIS

### Assaying Genotypes

A total of 8,829 fish were genotyped from 25 strata representing harvests (Table 4).

### 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 6). There were 37,152 genotypes compared between these analyses. The majority of discrepancies were between homozygote and heterozygote genotypes (0.51%), but some discrepancies between alternate homozygotes were observed (0.03%). Assuming all errors are equally likely to have occurred in the production and QC genotyping process, error rates for both error types was 0.27%. 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 8,829 fish genotyped, 161 were excluded from analysis because they were missing genotypes for more than 20% of loci, and 22 were excluded because they appeared to represent duplicate individuals (Appendix H). In the end, a total of 8,646 fish were used to produce stock composition estimates for 25 strata. Average sample size of strata was 346 fish with a minimum of 267 fish and a maximum of 440 fish.

### Stock Composition and Stock-Specific Harvest Estimates

#### *Commercial Harvest Estimates by Sampling Area by Year*

**Northwest Kodiak/Afognak (251, 253, 254)**

The stock composition in the Northwest Kodiak/Afognak sampling area was consistently dominated by British Columbia and West Coast US stocks across all 3 years (Tables 7–15; Figures 11–12). During 2014, the British Columbia reporting group contributed 72.1% and the

West Coast US reporting group contributed 15.7% to the first stratum (Table 7). The second stratum was similar, but saw a relative decrease in the proportion of British Columbia fish with 56.0% to British Columbia and 34.7% to West Coast US (Table 8). No other groups represented over 5% of the harvest in any strata (Figure 11). For 2014, stock-specific harvest in the Northwest Kodiak/Afognak area was estimated at 1,176 fish from the British Columbia reporting group, followed by 447 fish from West Coast US (Table 9; Figure 12).

In 2015, stock compositions were again dominated by British Columbia and West Coast US. For the first stratum, the majority of fish were from British Columbia (54.8%), followed by West Coast US with 24.3%, Southeast Alaska/Northeast Gulf of Alaska with 8.5%, and Cook Inlet with 6.4% (Table 10). The second stratum was very similar, with British Columbia (52.1%) and West Coast US (34.9%) reporting groups continuing to be the most prevalent (Table 11; Figure 11). Harvest by stock during 2015 consisted of 1,322 British Columbia fish, 697 West Coast US fish, 176 Southeast Alaska/Northeast Gulf of Alaska fish, and 139 Cook Inlet fish (Table 12; Figure 12).

In 2016, British Columbia remained in the majority for the first stratum with 59.6%, followed by West Coast US with 15.0%, Southeast Alaska/Northeast Gulf of Alaska with 12.7%, and Cook Inlet with 7.8% (Table 13). A similar pattern held in the second stratum: British Columbia with 63.9% of the harvest, followed by West Coast US with 19.4%, Southeast Alaska/Northeast Gulf of Alaska with 10.3%, and Cook Inlet with 5.6% (Table 14). No other groups represented over 5% of the harvest in any strata (Figure 11). The harvest of the British Columbia reporting group was 1,297 fish, followed by 364 fish from the West Coast US, 241 fish from Southeast Alaska/Northeast Gulf of Alaska, and 141 fish from Cook Inlet (Table 15; Figure 12).

**Southwest Kodiak/Alitak (255, 256, 257)**

The stock composition of the Southwest Kodiak/Alitak sampling area was similar to that of Northwest Kodiak/Afognak; the harvest was consistently dominated by British Columbia and West Coast US stocks across all 3 years, with the notable exception of the presence of Kodiak stocks (Tables 16–24; Figures 13–14). During 2014, the British Columbia reporting group contributed 51.2% to the first stratum, the West Coast US reporting group contributed 30.8%, followed by Kodiak with 10.0%, and Southeast Alaska/Northeast Gulf of Alaska with 6.1% (Table 16). The second stratum was almost exclusively British Columbia (54.5%) and West Coast US (39.0%) stocks (Table 17). No other groups represented over 5% of the harvest in any strata (Figure 13). For 2014, stock-specific harvest in the Southwest Kodiak/Alitak area were estimated at 909 fish from the British Columbia reporting group, followed by 627 fish from the West Coast US group (Table 18; Figure 14). While Kodiak stocks made up 10.0% of the catch for the first stratum, the number of fish harvested in the first stratum was much lower than in the second stratum where Kodiak stocks only made up 1.0% of the catch, resulting in only 3.3% of the annual 2014 catch in the Southwest Kodiak/Alitak area being attributed to Kodiak stocks, or approximately 55 fish (Table 18).

In 2015, stock compositions were similar to 2014, with the exception of Kodiak stocks, which were even more prevalent in the first stratum, accounting for 24.9% of the harvest, along with West Coast US (35.2%) and British Columbia (33.8%) stocks (Table 19). The second stratum saw an increase in the proportion of British Columbia stocks to 63.1%, and West Coast US stocks were similar to the first stratum with 30.3% (Table 20). No other stocks represented over

5% of the harvest in any strata (Figure 13). Harvest by stock during 2015 consisted of 1,462 British Columbia fish, 799 West Coast US fish, and 152 Kodiak fish (Table 21; Figure 14).

In 2016, the first and second stratum were very consistent, with both showing a higher proportion of British Columbia stock relative to West Coast US. The first stratum included 67.1% British Columbia and 24.6% West Coast US (Table 22), which was nearly identical to the second stratum with 69.2% British Columbia and 24.7% West Coast US (Table 23). No other groups represented over 5% of the harvest in any strata (Figure 13). Overall, the harvest of British Columbia stocks was 528 fish, followed by the West Coast US with 191 fish (Table 24; Figure 14).

**Eastside Kodiak/Afognak (258, 259, 252)**

The stock composition of commercial harvest from Eastside Kodiak/Afognak sampling area was largely consistent with other areas—it was dominated by British Columbia and West Coast US stocks; however, it appeared that there was less temporal variation within years compared to other areas in KMA (Tables 25–33; Figures 15–16). During 2014, there was almost no appreciable temporal variation between the first and second strata: the majority of the harvest was attributed to British Columbia (51.2% and 51.7%), followed by West Coast US (35.3% and 37.5%; Tables 25–26; Figure 15). While present in small numbers, no other stocks represented over 5% of the harvest in any strata (Figure 15). Stock-specific harvest in the Eastside Kodiak/Afognak area consisted of 1,514 British Columbia fish and 1,091 West Coast US fish (Table 27; Figure 16).

In 2015, the relative contribution of British Columbia and West Coast US stocks flipped for the first stratum, with the West Coast US reporting group representing 46.8% and British Columbia 36.5% of the harvest, followed by Cook Inlet with 7.8% (Table 28). In the second strata, British Columbia increased to just shy of the majority of the catch with 49.4%, followed by the West Coast US with 40.7% (Table 29). No other groups represented over 5% of the harvest in any strata (Figure 15). Overall, commercial harvest from Eastside Kodiak/Afognak consisted of 984 West Coast US fish, 910 British Columbia fish, and 120 Cook Inlet fish (Table 30; Figure 16).

In 2016, stock compositions were similar to those of 2014. In the first stratum, British Columbia consisted of 57.0% of the harvest, followed by West Coast US with 27.4% and Southeast Alaska/Northeast Gulf of Alaska with 6.4% (Table 31). The second strata saw a relative increase of West Coast US stocks with 39.5%, followed by British Columbia with 51.5% (Table 32; Figure 15). No other stocks contributed over 5% to the harvest in any strata (Figure 15). Overall, 655 British Columbia and 431 West Coast US fish were harvested (Table 33; Figure 16).

**Mainland (262)**

The stock composition of the Mainland District was similar to other areas; the harvest was largely from British Columbia and West Coast US stocks, with low numbers from Southeast Alaska/Northeast Gulf of Alaska (Tables 34–40; Figures 17–18). In 2014, fishing only occurred in the second stratum with 51.2% of the catch attributed to British Columbia and 39.5% to West Coast US (Tables 34–35). No other reporting groups represented over 5% of the harvest (Figure 17). Overall, harvest was low in 2014 and stock-specific harvest consisted of 216 British Columbia fish and 167 West Coast US fish (Table 35; Figure 18).

In 2015, similar to 2014, there was no fishing in the early stratum and overall harvest was low (Figure 18). The second stratum was dominated by British Columbia, with 64.0% of the catch,

followed by West Coast US with 19.6%, and Cook Inlet with 12.8% (Tables 36–37). No other stocks contributed over 5% to the harvest in any strata (Figure 15).Overall harvest was low in 2015, with 147 fish from British Columbia, 45 from West Coast US, and 29 from Cook Inlet (Table 37; Figure 18).

In 2016, fishing occurred in both strata and harvests were up relative to 2014 and 2015; however, stock composition was similar to other KMA areas—dominated by British Columbia and West Coast US. The first stratum harvest was evenly split between British Columbia with 46.6% and West Coast US with 44.1% (Table 38). In the late stratum, British Columbia increased to 54.1% and West Coast US decreased to 37.1%, with minor contributions from Southeast Alaska/Northeast Gulf of Alaska with 5.1% (Table 39). No other groups contributed over 5% of the harvest in any strata (Figure 17). Overall, harvest in 2015 consisted of 1,362 British Columbia fish and 1,088 West Coast US fish (Table 40; Figure 18).

### *Commercial Harvest Estimates by Year*

All the commercial harvest results for each year were combined to estimate total KMA stock composition and stock-specific harvest summaries for commercial harvest from June 1 through August 5, 2014–2016. Overall, the results are surprisingly consistent across years with KMA commercial harvest dominated by British Columbia and West Coast US stocks, with minor contributions from Southeast Alaska/Northeast Gulf of Alaska, Cook Inlet, and Kodiak (Tables 41–43; Figures 19–20).

In 2014, the total KMA harvest of 6,867 Chinook salmon consisted of 55.6% British Columbia, 34.0% West Coast US, 3.4% Southeast Alaska/Northeast Gulf of Alaska, 2.6% Cook Inlet, 1.9% Kodiak, and 1.6% Eastern Bering Sea group fish (Table 41; Figure 19). The British Columbia group harvest was 3,815 fish, West Coast US group was 2,333 fish, Southeast Alaska/Northeast Gulf of Alaska was 233 fish, Cook Inlet group was 182 fish, Kodiak group was 134 fish, and the Eastern Bering Sea group was 113 fish (Table 41; Figure 20).

In 2015, the total KMA harvest of 7,477 Chinook salmon consisted of 51.6% British Columbia, 33.9% West Coast US, 4.9% Southeast Alaska/Northeast Gulf of Alaska, 4.5% Cook Inlet, and 4.5% Kodiak group fish (Table 42; Figure 19). The British Columbia group harvest was 3,840 fish, West Coast US group was 2,526 fish, Southeast Alaska/Northeast Gulf of Alaska was 368 fish, Cook Inlet group was 334 fish, and the Kodiak group was 333 fish (Table 42; Figure 20).

In 2016, the total KMA harvest of 6,791 Chinook salmon consisted of 56.6% British Columbia, 30.6% West Coast US, 6.2% Southeast Alaska/Northeast Gulf of Alaska, 3.8% Cook Inlet, and 1.3% Kodiak group fish (Table 43; Figure 19). The British Columbia group harvest was 3,842 fish, West Coast US group was 2,075 fish, Southeast Alaska/Northeast Gulf of Alaska was 424 fish, Cook Inlet group was 260 fish, and the Kodiak group was 91 fish (Table 43; Figure 20).

### *Sport Harvest Estimates by Year*

The stock composition of KRA marine sport fisheries largely paralleled those of commercial fisheries; the harvest was dominated by British Columbia and West Cost US stocks, with minor contributions from Southeast Alaska/Northeast Gulf of Alaska and Kodiak stocks (Tables 44–46; Figure 21). In 2014, when sampling occurred in both Larsen Bay and Kodiak, harvest was evenly split between British Columbia (46.1%) and West Coast US (44.1%), followed by Southeast Alaska/Northeast Gulf of Alaska with 6.8%. The British Columbia group harvest was 3,712

Chinook salmon, West Coast US was 3,548, and Southeast Alaska/Northeast Gulf of Alaska was 550 (Table 44).

In 2015, when sampling only occurred in Kodiak, West Coast US stocks had a higher contribution (45.3%) than British Columbia (36.6%), with 3,042 West Coast US fish and 2,457 British Columbia fish. Stock composition estimates were similar to the commercial harvest from Eastside Kodiak, with additional contributions from Southeast Alaska/Northeast Gulf of Alaska of 10.6% (708 fish), and Kodiak with 5.0% (334 fish; Table 45).

In 2016, stock compositions were similar to 2015, with the relative contributions of British Columbia and West Coast US flipped, with 46.3% of the harvest attributed to British Columbia, 36.9% to West Coast US, and 11.8% to Southeast Alaska/Northeast Gulf of Alaska (Table 46). Stock-specific harvest estimates were not calculated in 2016 as the total marine sport harvest estimate was not available at the time of publication. No other stocks contributed to over 5% to the marine sport harvest in any of the 3 years (Figure 21).

### *Estimates by Reporting Group*

#### Russia

Russian fish did not constitute greater than 5% of a mixture in any of the 22 commercial spatiotemporal strata analyzed. Overall, Russian fish contributions to the sampled annual KMA harvest were very small, amounting to 0.3% (21 fish), 0.1% (7 fish) and 0.0% (0 fish) of the KMA commercial Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 41–43; Figures 22–24).

Russian fish did not constitute greater than 5% of a mixture in any of the 3 years of KRA marine sport samples analyzed. Overall, Russian fish contributions to the sampled annual KRA harvest amounted to 0.0% in all 3 years of the marine sport Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 44–46).

#### Eastern Bering Sea

Eastern Bering Sea fish did not constitute greater than 5% of a mixture in any of the 22 commercial spatiotemporal strata analyzed. Overall, Eastern Bering Sea fish contributions to the sampled annual KMA harvest were very small, amounting to 1.6% (113 fish), 0.2% (15 fish) and 0.7% (47 fish) of the KMA commercial Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 41–43; Figures 22–24).

Eastern Bering Sea fish did not constitute greater than 5% of a mixture in any of the 3 years of KRA marine sport samples analyzed. Overall, Eastern Bering Sea fish contributions to the sampled annual KRA harvest amounted to 0.0%, 0.0%, and 0.5% of the marine sport Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 44–46).

#### North Alaska Peninsula

North Alaska Peninsula fish did not constitute greater than 5% of a mixture in any of the 22 commercial spatiotemporal strata analyzed. Overall, North Alaska Peninsula fish contributions to the sampled annual KMA harvest were very small, amounting to 0.0% (3 fish), 0.0% (0 fish) and 0.0% (0 fish) of the KMA commercial Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 41–43; Figures 22–24).

North Alaska Peninsula fish did not constitute greater than 5% of a mixture in any of the 3 years of KRA marine sport samples analyzed. Overall, North Alaska Peninsula fish contributions to the sampled annual KRA harvest amounted to 0.0% in all 3 years of the marine sport Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 44–46).

**Chignik**

Chignik fish did not constitute greater than 5% of a mixture in any of the 22 commercial spatiotemporal strata analyzed. Overall, Chignik fish contributions to the sampled annual KMA harvest were very small, amounting to 0.1% (9 fish), 0.0% (0 fish) and 0.4% (26 fish) of the KMA commercial Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 41–43; Figures 22–24).

Chignik fish did not constitute greater than 5% of a mixture in any of the 3 years of KRA marine sport samples analyzed. Overall, Chignik fish contributions to the sampled annual KRA harvest amounted to 0.0% in all 3 years of the marine sport Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 44–46).

**Kodiak**

Kodiak fish only constituted greater than 5% of a mixture in 2 of the 22 commercial spatiotemporal strata analyzed. Kodiak fish were 10.0% of the harvest (41 fish) in the early temporal stratum of the Southwest Kodiak/Alitak sampling area in 2014 (Table 16) and 24.9% of the harvest (127 fish) in the early temporal stratum of the Southwest Kodiak/Alitak sampling area in 2015 (Table 19). Overall, Kodiak fish contributions to the sampled annual KMA harvest were small, amounting to 1.9% (134 fish), 4.5% (333 fish) and 1.3% (91 fish) of the KMA commercial Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 41–43; Figures 22–24).

Kodiak fish only constituted greater than 5% of a mixture in 1 of the 3 years of KRA marine sport samples analyzed. Overall, Kodiak fish contributions to the sampled annual KRA harvest amounted to 1.6% (129 fish), 5.0% (334 fish), and 3.9%[b] of the marine sport Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 44–46).

**Cook Inlet**

Cook Inlet fish only constituted greater than 5% of a mixture in 5 of the 22 commercial spatiotemporal strata analyzed. Harvest of Cook Inlet group fish occurred almost exclusively in the early temporal strata of the Northwest Kodiak/Afognak sampling area in 2015 and 2016, the early temporal strata of the Eastside Kodiak/Afognak sampling area in 2015, and the late temporal strata of the Mainland sampling area in 2015. Overall, Cook Inlet fish contributions to the sampled annual KMA harvest were small, amounting to 2.6% (182 fish), 4.5% (334 fish) and 3.8% (260 fish) of the KMA commercial Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 41–43; Figures 22–24).

Cook Inlet fish did not constitute greater than 5% of a mixture in any of the 3 years of KRA marine sport samples analyzed. Overall, Cook Inlet fish contributions to the sampled annual

[b] Marine sport harvest numbers from the statewide harvest survey not available for 2016 at time of publication.

KRA harvest amounted to 0.9% (71 fish), 1.7% (114 fish), and 0.0% of the marine sport Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 44–46).

**Copper**

Copper fish did not constitute greater than 5% of a mixture in any of the 22 commercial spatiotemporal strata analyzed. Overall, Copper fish contributions to the sampled annual KMA harvest were very small, amounting to 0.1% (6 fish), 0.1% (7 fish) and 0.2% (15 fish) of the KMA commercial Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 41–43; Figures 22–24).

Copper fish did not constitute greater than 5% of a mixture in any of the 3 years of KRA marine sport samples analyzed. Overall, Copper fish contributions to the sampled annual KRA harvest amounted to 0.0% in all 3 years of the marine sport Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 44–46).

**Southeast Alaska/Northeast Gulf of Alaska**

Southeast Alaska/Northeast Gulf of Alaska fish constituted greater than 5% of a mixture in 6 of the 22 commercial spatiotemporal strata analyzed. Harvest of Southeast Alaska/Northeast Gulf of Alaska group fish occurred sporadically, in all 4 sampling areas and both temporal strata, for all 3 years. Overall, Southeast Alaska/Northeast Gulf of Alaska fish contributions to the sampled annual KMA harvest were relatively small, amounting to 3.4% (233 fish), 4.9% (368 fish), and 6.2% (424 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 41–43; Figures 22–24).

Southeast Alaska/Northeast Gulf of Alaska fish constituted greater than 5% of a mixture in all 3 years of KRA marine sport samples analyzed. Overall, Southeast Alaska/Northeast Gulf of Alaska fish contributions to the sampled annual KRA harvest amounted to 6.8% (550 fish), 10.6% (708 fish), and 11.8% of the marine sport Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 44–46).

**British Columbia**

British Columbia fish constituted greater than 5% of a mixture in all 22 of the commercial spatiotemporal strata analyzed, accounting for the majority of fish harvested in all but 4 spatiotemporal strata. Harvest of British Columbia group fish occurred throughout all 4 sampling areas and both temporal strata for all 3 years. No clear temporal patterns in harvest emerged. Overall, British Columbia fish contributions to the sampled annual KMA harvest were very consistent across sampling years, amounting to 55.6% (3,815 fish), 51.6% (3,840 fish), and 56.6% (3,842 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 41–43; Figures 22–24).

British Columbia fish constituted greater than 5% of a mixture in all 3 years of KRA marine sport samples analyzed. Overall, British Columbia fish contributions to the sampled annual KRA harvest amounted to 46.1% (3,712 fish), 36.6% (2,457 fish), and 46.3% of the marine sport Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 44–46).

**West Coast US**

West Coast US fish constituted greater than 5% of a mixture in all 22 of the commercial spatiotemporal strata analyzed. Harvest of West Coast US group fish occurred throughout all 4 sampling areas and both temporal strata, for all 3 years. No clear temporal patterns in harvest emerged. Overall, West Coast US fish contributions to the sampled annual KMA harvest were very consistent across sampling years, amounting to 34.0% (2,333 fish), 33.9% (2,526 fish), and 30.6% (2,075 fish) of the KMA commercial sockeye salmon harvest from sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 41–43; Figures 22–24).

West Coast US fish constituted greater than 5% of a mixture in all 3 years of KRA marine sport samples analyzed. Overall, West Coast US fish contributions to the sampled annual KRA harvest amounted to 44.1% (3,548 fish), 45.3% (3,042 fish), and 36.9% of the marine sport Chinook salmon harvest from the sampling areas and temporal periods analyzed in this project, 2014–2016 (Tables 44–46).

# DISCUSSION

The overall goal of this project was to comprehensively estimate stock-specific harvests of Chinook salmon in Kodiak Archipelago commercial and marine sport fisheries using a combination of MSA and CWT recoveries. This project was needed to estimate contributions of relevant indicator stocks (i.e., Karluk and Chignik) in mixed-stock harvests around the Kodiak Archipelago and broadly characterize the stock of origin, age, sex, and length of harvests (ADF&G Chinook Salmon Research Team 2013). Of the 10,154 Chinook salmon genetic tissue samples collected in 25 strata, 8,829 were genotyped and 8,646 were ultimately used for MSA. These samples were genotyped for 48 SNPs chosen specifically for MSA and analyzed with a robust baseline containing 29,001 individuals from 403 collections representing 211 populations in 10 reporting groups. These reporting groups represent all major North Pacific Chinook salmon stocks (Templin et al. 2011). These results represent all commercial salmon harvests and all accessible marine sport harvests in the Kodiak Archipelago and should improve our understanding of stock productivity and migration patterns.

## COMMERCIAL FISHERIES

Chinook salmon commercial harvests from all districts of KMA were sampled as 4 spatial areas over 2 temporal strata from June 1 to August 5, 2014–2016, representing 81.9%, 92.1%, 90.8% of the total commercial harvest in these years (Table 4). British Columbia and West Coast US Chinook salmon dominated the KMA commercial harvest consistently across all years and temporal stratum (Figures 22–24). The only Alaska reporting group estimates at or above 10% in any strata was the Kodiak reporting group in Southwest Kodiak/Alitak early strata 2014 (10.0%) and 2015 (24.9%), Cook Inlet reporting group in the Mainland late stratum 2015 (12.8%), and Southeast Alaska/Northeast Gulf of Alaska reporting group in the Northwest Kodiak/Afognak early (12.7%) and late (10.3%) strata 2016.

The highest proportions of Kodiak reporting group fish were caught in the early temporal strata of the Southwest Kodiak/Alitak area (Figure 13). This pattern of higher *local* harvest during the early strata coincides with when returning adults are migrating through commercial fisheries to their natal streams. Higher *local* Kodiak reporting group harvest in the Southwest Kodiak/Alitak area is also expected given that the 2 primary wild stocks in the Kodiak Archipelago, Karluk and Ayakulik, are in Southwest Kodiak District (Figure 5).

Age composition of the commercial harvests demonstrated a mix of both "ocean-type"(age-0.x) and "stream-type" (age-1.x) fish (Healy 1991). The dominant ages in order of relative abundance were: age-0.2, -0.3, -1.2, -0.1, -1.3, -1.1, -0.4, -1.4, -2.2, -2.1, and -0.5 (Appendix D). The presence of both life history types, a multitude of ages, large size ranges, CWT recoveries, and estimates of genetic stock of origin illustrate that the Northern Gulf of Alaska, specifically Kodiak Archipelago, is a within a major migratory route of maturing Chinook salmon populations from the entirety of Western North America.

Recoveries of CWTs in the commercial fishery are comparable to the historical CWT studies in the Kodiak area where recoveries were mainly *nonlocal* fish, predominantly British Columbia and West Coast US (Swanton 1997; Clark and Nelson 2001). This study documented CWTs primarily from the West Coast US (primarily Washington) and British Columbia (Appendix F). Only 38 CWTs from Alaska were recovered from the commercial fishery during the 3 years of sampling, with 3 fish of wild stock origin (Taku, Stikine, and Unuk rivers).

This study represents the most comprehensive project to date on the genetic stock of origin of Chinook salmon commercial harvest in KMA. The most comparable recent study is Guthrie et al. (2016), which analyzed the genetic stock composition of Chinook salmon bycatch samples from the Gulf of Alaska trawl fisheries offshore from both Kodiak Archipelago and the South Alaska Peninsula from 2010 to 2014. British Columbia and West Coast US stocks dominated the harvest in both the trawl and salmon fisheries, although sampling from the trawl fisheries only overlapped with sampling from the commercial salmon fishery in one year (2014). Nevertheless, Chinook salmon bycatch in the trawl fishery had higher proportions of Southeast Alaska stocks than were observed in this study, which may be a function of the migration distribution of *stream-type* Chinook salmon theorized to be more offshore oriented than *ocean-type* Chinook salmon (Sharma and Quinn 2012).

## SPORT FISHERIES

Sport harvests were generally sampled from mid-May through mid-September, 2014–2016. However, samples were not collected from the entire KRA; they came primarily from the Port of Kodiak, with the exception of samples from Larsen Bay in 2014. Samples were not collected from several Chinook salmon sport fisheries such as areas near the village of Old Harbor and Afognak Island; stock compositions are unknown for sport harvests in these areas. However, samples collected from the Port of Kodiak were similar in stock compositions to those collected in commercial fisheries throughout the Kodiak Area and it is likely that they were representative sport harvests in the greater Kodiak Area.

British Columbia, West Coast US, and to a lesser extent, Southeast Alaska/Northeast Gulf of Alaska stocks dominated marine sport harvest in KRA from 2014 to 2016 (Figures 22–24). Harvest of Kodiak stocks increased in 2015 and 2016 relative to samples collected in 2014, when Larsen Bay samples were included. Although never greater than 5.0% of the total sport harvest, Kodiak stocks represented the fourth largest portion of the harvest after the West Coast US, British Columbia, and Southeast Alaska. Increased harvests of Kodiak stocks in 2015 and 2016 coincided with the largest returns to date of hatchery Chinook salmon to the Kodiak road system, due in part to an ongoing Chinook salmon enhancement project in several local streams. Although separation of local Kodiak stocks (Karluk, Ayakulik, and Kodiak hatchery-origin fish) in the harvest was not possible, it is likely that this increase reflects these large returns of Kodiak

hatchery-origin fish. Harvests of Chinook salmon from other areas were minimal across all 3 years of sampling.

Stock compositions of marine sport and commercial harvests were similar, but did differ in some ways, despite differences in sampling timeframe, gear type, and the larger average size sampled as part of the sport harvest. Both sport and commercial harvests were dominated by the British Columbia and West Coast US stocks (Tables 44–46). However, sport harvests tended to have lower percentages of British Columbia and Cook Inlet stocks and higher percentages of Southeast Alaska/Northeast Gulf of Alaska and West Coast US than commercial harvests.

Results were largely in agreement with current and previous CWT work. This work indicated that the vast majority of stocks incidentally harvested in the commercial fisheries or targeted in the marine sport fisheries in the KMA are non-Alaska stocks from British Columbia and the West Coast US. In marine sport fishery harvests, most CWT recoveries were from Washington state hatcheries (Appendix G) with little variation in the percent recovered. Only 5 CWTs from Alaska were recovered from the sport fishery during the 3 years of sampling.

### HARVEST OF KODIAK STOCKS

Kodiak stocks made up a relatively small proportion of the overall commercial and sport marine Chinook salmon harvests (Tables 41–46). From 2014 to 2016, the total commercial harvest of Chinook salmon in KMA attributed to Kodiak stocks ranged from 91 to 333 fish and never exceeded 5% of the total KMA Chinook salmon harvest (Tables 41–43; Figures 22–24). Total marine sport harvest of Kodiak stocks in the KRA was 129 fish in 2014 and 334 in 2015 (harvest estimates were not available for 2016 by time of publication), and never exceeded 5% of the total KMA Chinook salmon harvest (Tables 44–46). It is important to note that hatchery-produced Chinook salmon from Pillar Creek hatchery are included in the Kodiak reporting group, and are not distinguishable from *local* wild stocks, because Karluk River was the brood source. Results from this study indicate that harvest of 2 key CSRI indicator stocks, Chignik and Karluk rivers, are minimal in Kodiak commercial and marine sport fisheries.

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# TABLES AND FIGURES

Table 1.–Westward Region Chinook salmon commercial harvest, 1985–2016, and the 2004–2013 10-year average.

| | Kodiak (Area K) | | | Chignik (Area L) | | | Alaska Peninsula (Area M) | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Number | Pounds | Avg Wt (lbs) | Number | Pounds | Avg Wt (lbs) | Number | Pounds | Avg Wt (lbs) |
| 1985 | 4,970 | 96,106 | 19.34 | 1,887 | 44,874 | 23.78 | 30,210 | 588,718 | 19.49 |
| 1986 | 4,381 | 66,901 | 15.27 | 3,037 | 66,772 | 21.99 | 17,340 | 300,187 | 17.31 |
| 1987 | 4,612 | 59,083 | 12.81 | 2,651 | 49,482 | 18.67 | 23,360 | 434,501 | 18.60 |
| 1988 | 22,394 | 296,062 | 13.22 | 7,296 | 128,880 | 17.66 | 27,880 | 476,182 | 17.08 |
| 1989 | 106 | 2,037 | 19.22 | 3,542 | 76,698 | 21.65 | 18,013 | 322,596 | 17.91 |
| 1990 | 18,808 | 229,337 | 12.19 | 9,901 | 134,265 | 13.56 | 28,844 | 467,986 | 16.22 |
| 1991 | 22,234 | 269,911 | 12.14 | 3,288 | 69,686 | 21.19 | 17,345 | 283,025 | 16.32 |
| 1992 | 24,299 | 347,817 | 14.31 | 10,832 | 138,090 | 12.75 | 21,170 | 352,301 | 16.64 |
| 1993 | 41,029 | 496,917 | 12.11 | 19,515 | 234,253 | 12.00 | 37,998 | 658,184 | 17.32 |
| 1994 | 22,576 | 315,000 | 13.95 | 3,919 | 71,865 | 18.34 | 28,649 | 527,155 | 18.40 |
| 1995 | 18,704 | 257,744 | 13.78 | 5,261 | 111,187 | 21.13 | 25,024 | 494,265 | 19.75 |
| 1996 | 13,071 | 178,538 | 13.66 | 3,105 | 62,603 | 20.16 | 10,461 | 179,197 | 17.13 |
| 1997 | 18,728 | 186,869 | 9.98 | 3,032 | 47,224 | 15.58 | 18,164 | 292,768 | 16.12 |
| 1998 | 17,341 | 249,285 | 14.38 | 4,395 | 66,530 | 15.14 | 10,847 | 166,161 | 15.32 |
| 1999 | 18,299 | 232,505 | 12.71 | 3,296 | 56,706 | 17.20 | 9,960 | 151,196 | 15.18 |
| 2000 | 12,293 | 183,423 | 14.92 | 2,592 | 34,757 | 13.41 | 9,350 | 146,006 | 15.62 |
| 2001 | 23,827 | 330,896 | 13.89 | 2,849 | 39,372 | 13.82 | 7,045 | 97,845 | 13.89 |
| 2002 | 19,263 | 192,096 | 9.97 | 1,444 | 13,750 | 9.52 | 10,280 | 137,485 | 13.37 |
| 2003 | 18,531 | 189,436 | 10.22 | 2,759 | 39,729 | 14.40 | 7,419 | 97,912 | 13.20 |
| 2004 | 28,899 | 328,129 | 11.35 | 2,343 | 43,736 | 18.67 | 17,525 | 279,818 | 15.97 |
| 2005 | 14,411 | 168,336 | 11.68 | 3,137 | 55,638 | 17.74 | 13,752 | 186,102 | 13.53 |
| 2006 | 20,283 | 209,359 | 10.32 | 2,188 | 38,036 | 17.38 | 13,090 | 181,129 | 13.84 |
| 2007 | 17,222 | 163,518 | 9.49 | 1,757 | 29,973 | 17.06 | 12,933 | 166,327 | 12.86 |
| 2008 | 17,176 | 138,103 | 8.04 | 955 | 14,463 | 15.14 | 6,178 | 102,638 | 16.61 |
| 2009 | 7,219 | 66,207 | 9.17 | 3,244 | 30,791 | 9.49 | 9,064 | 144,441 | 15.94 |
| 2010 | 14,548 | 116,085 | 7.98 | 10,262 | 102,684 | 10.01 | 10,637 | 147,277 | 13.85 |
| 2011 | 18,454 | 173,049 | 9.38 | 6,444 | 72,350 | 11.23 | 9,585 | 126,945 | 13.24 |
| 2012 | 14,785 | 108,957 | 7.37 | 3,636 | 48,850 | 13.44 | 8,750 | 139,671 | 15.96 |
| 2013 | 34,028 | 255,031 | 7.49 | 2,877 | 35,653 | 12.39 | 7,281 | 86,465 | 11.88 |
| 2014 | 8,382 | 61,179 | 7.30 | 8,811 | 75,753 | 8.60 | 8,260 | 85,097 | 10.30 |
| 2015 | 8,087 | 73,683 | 9.11 | 9,120 | 71,882 | 7.88 | 56,080 | 374,267 | 6.67 |
| 2016 | 7,482 | 62,871 | 8.40 | 20,684 | 155,088 | 7.50 | 17,183 | 157,205 | 9.15 |
| Average 2004–2013 | 18,703 | 172,677 | 9.23 | 3,684 | 47,217 | 14.25 | 10,880 | 156,081 | 14.37 |

*Note*: 2016 harvest numbers are preliminary as of fish tickets entered by 9/26/16.

Table 2.–Kodiak Regulatory Area Chinook salmon marine sport harvest according to the statewide harvest survey and logbook program, 2006–2015, and the 10-year average.

| Chinook Salmon Harvest | | | | |
|---|---|---|---|---|
| | Chiniak Bay | | Kodiak Regulatory Area | |
| Year | Guided | SWHS[a] | Guided | SWHS[a] |
| 2006 | 2,737 | 5,640 | 5,011 | 10,333 |
| 2007 | 3,812 | 7,203 | 4,984 | 10,626 |
| 2008 | 2,705 | 7,714 | 3,527 | 9,408 |
| 2009 | 1,331 | 6,628 | 2,124 | 8,773 |
| 2010 | 601 | 2,747 | 1,524 | 5,208 |
| 2011 | 1,334 | 4,171 | 2,230 | 7,926 |
| 2012 | 1,070 | 4,516 | 3,036 | 7,558 |
| 2013 | 384 | 4,166 | 1,687 | 8,452 |
| 2014 | 377 | 3,853 | 2,925 | 8,049 |
| 2015 | 328 | 3,099 | 2,138 | 6,709 |
| Average 2006–2015 | 1,468 | 4,974 | 2,919 | 8,304 |

[a] Statewide harvest survey is an estimate of the total harvest

Table 3.–Genetic baseline tissue collections of Chinook salmon collected throughout their coastal range, including reporting group used for mixed stock analysis, years sampled, and number of samples analyzed from each collection included in the baseline (n).

| Pop. No. | Reporting Group | Location[a] | Sample Year(s) | n |
|---|---|---|---|---|
| 1 | Russia | Bistraya River | 1998 | 94 |
| 2 | | Bolshaya River | 1998, 2002 | 76 |
| 3 | | Kamchatka River late | 1997–1998 | 115 |
| 4 | | Pakhatcha River | 2002 | 50 |
| | | | Russia Total | 335 |
| 5 | Eastern Bering Sea | Pilgrim River | 2005–2006 | 72 |
| 6 | | Unalakleet River | 2005 | 82 |
| 7 | | Golsovia River | 2005–2006 | 112 |
| 8 | | Andreafsky River | 2002–2003 | 232 |
| 9 | | Anvik River | 2002 | 51 |
| 10 | | Gisasa River | 2001 | 99 |
| 11 | | Tozitna River | 2002–2003 | 355 |
| 12 | | Henshaw Creek | 2001 | 145 |
| 13 | | South Fork Koyukuk River | 2003 | 51 |
| 14 | | Kantishna River | 2005 | 187 |
| 15 | | Chena River | 2001 | 181 |
| 16 | | Salcha River | 2005 | 188 |
| 17 | | Beaver Creek | 1997 | 91 |
| 18 | | Chandalar River | 2002–2004 | 168 |
| 19 | | Sheenjek River | 2002, 2004, 2006 | 47 |
| 20 | | Chandindu River | 2000–2001, 2003 | 237 |
| 21 | | Klondike River | 1995, 2001, 2003 | 74 |
| 22 | | Stewart River | 1997 | 98 |
| 23 | | Mayo River | 1992, 1997, 2003 | 122 |
| 24 | | Blind River | 2003 | 134 |
| 25 | | Pelly River | 1996, 1997 | 116 |
| 26 | | Little Salmon River | 1987, 1997 | 86 |
| 27 | | Big Salmon River | 1987, 1997 | 106 |
| 28 | | Tatchun Creek | 1987, 1997, 2002–2003 | 163 |
| 29 | | Nordenskiold River | 2003 | 55 |
| 30 | | Nisutlin River | 1987, 1997 | 55 |
| 31 | | Takhini River | 1997, 2002–2003 | 160 |
| 32 | | Whitehorse Hatchery | 1985, 1987, 1997 | 218 |
| 33 | | Goodnews River | 1993, 2005–2006 | 367 |
| 34 | | Arolik River | 2005 | 148 |
| 35 | | Kanektok River | 1992–1993, 2005 | 243 |
| 36 | | Eek River | 2002, 2005 | 171 |
| 37 | | Kwethluk River | 2001 | 94 |

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Table 3.–Page 2 of 6.

| Pop. No. | Reporting Group | Location[a] | Sample Year(s) | n |
|---|---|---|---|---|
| 38 | Eastern Bering Sea | Kisaralik River | 2001, 2005 | 191 |
| 39 | | Tuluksak River | 1993–1994, 2005 | 195 |
| 40 | | Aniak River | 2002, 2006 | 251 |
| 41 | | George River | 2002, 2005 | 191 |
| 42 | | Kogrukluk River | 1992–1993, 2005 | 149 |
| 43 | | Stony River | 1994 | 94 |
| 44 | | Cheeneetnuk River | 2002, 2006 | 115 |
| 45 | | Gagaryah River | 2006 | 190 |
| 46 | | Takotna River | 1994, 2005 | 170 |
| 47 | | Tatlawiksuk River | 2002, 2005 | 190 |
| 48 | | Salmon River - Pitka Fork | 1995 | 96 |
| 49 | | Togiak River | 1993–1994 | 154 |
| 50 | | Nushagak River | 1992–1993 | 57 |
| 51 | | Mulchatna River | 1994 | 97 |
| 52 | | Stuyahok River | 1993–1994 | 87 |
| 53 | | Naknek River | 1995, 2004 | 110 |
| 54 | | Big Creek | 2004, 2008 | 102 |
| | | | Eastern Bering Sea Total | 7,147 |
| 55 | North Peninsula | King Salmon River | 2006 | 131 |
| 56 | | Meshik River | 2006, 2012, 2014 | 167 |
| 57 | | Milky River | 2006 | 66 |
| 58 | | Nelson River | 2006, 2012–2013 | 189 |
| 59 | | Black Hills Creek | 2006–2007 | 121 |
| 60 | | Steelhead Creek | 2006 | 93 |
| | | | North Peninsula Total | 767 |
| 61 | Chignik | Chignik River | 1995, 2006, 2012 | 141 |
| | | | Chignik Total | 141 |
| 62 | Kodiak | Ayakulik River | 1993, 2006–2007 | 336 |
| 63 | | Karluk River | 1993, 2006–2007, 2012 | 305 |
| | | | Kodiak Total | 641 |
| 64 | Cook Inlet | Straight Creek | 2010 | 95 |
| 65 | | Chuitna River | 2008–2009 | 134 |
| 66 | | Coal Creek | 2009–2011 | 118 |
| 67 | | Theodore River | 2010–2012 | 191 |
| 68 | | Lewis River | 2011–2012 | 87 |
| 69 | | Red Creek | 2012–2013 | 111 |
| 70 | | Hayes River | 2012–2013 | 50 |
| 71 | | Canyon Creek | 2012–2013 | 91 |
| 72 | | Talachulitna River | 1995, 2008, 2010 | 178 |

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Table 3.–Page 3 of 6.

| Pop. No. | Reporting Group | Location[a] | Sample Year(s) | n |
|---|---|---|---|---|
| 73 | Cook Inlet | Sunflower Creek | 2009, 2011 | 123 |
| 74 | | Peters Creek | 2009–2012 | 107 |
| 75 | | Portage Creek | 2009–2011, 2013 | 162 |
| 76 | | Indian River | 2013 | 79 |
| 77 | | Chulitna River middle fork | 2009–2010 | 169 |
| 78 | | Chulitna River east fork | 2009–2011, 2013 | 77 |
| 79 | | Byers Creek | 2013 | 55 |
| 80 | | Spink Creek | 2013 | 56 |
| 81 | | Troublesome Creek | 2013 | 71 |
| 82 | | Bunco Creek | 2013 | 99 |
| 83 | | unnamed Talkeetna trib | 2013 | 69 |
| 84 | | Prairie Creek | 1995, 2008 | 162 |
| 85 | | Iron Creek | 2013 | 57 |
| 86 | | Disappointment Creek | 2013 | 64 |
| 87 | | Chunilna Creek | 2009, 2012 | 80 |
| 88 | | Montana Creek | 2008–2010 | 213 |
| 89 | | Little Willow Creek | 2013 | 54 |
| 90 | | Willow Creek | 2005, 2009 | 170 |
| 91 | | Deshka River | 1995, 2005, 2012 | 303 |
| 92 | | Sucker Creek | 2011–2012 | 144 |
| 93 | | Little Susitna River | 2009–2010 | 124 |
| 94 | | Moose Creek | 1995, 2008–2009, 2012 | 149 |
| 95 | | Eagle River | 2009, 2011–2012 | 77 |
| 96 | | Ship Creek | 2009 | 268 |
| 97 | | Campbell Creek | 2010–2012 | 110 |
| 98 | | Carmen River | 2011–2012 | 50 |
| 99 | | Resurrection Creek | 2010–2012 | 97 |
| 100 | | Chickaloon River | 2008, 2010–2011 | 128 |
| 101 | | Grant Creek | 2011–2012 | 55 |
| 102 | | Quartz Creek | 2006–2011 | 131 |
| 103 | | Crescent Creek | 2006 | 163 |
| 104 | | Juneau Creek | 2005–2007 | 142 |
| 105 | | Russian River | 2005–2008 | 214 |
| 106 | | Kenai Upper Mainstem | 2009 | 191 |
| 107 | | Benjamin Creek | 2005–2006 | 204 |
| 108 | | Killey River | 2005–2006 | 255 |
| 109 | | Funny River | 2005–2006 | 219 |
| 110 | | Kenai Middle Mainstem | 2003–2004, 2006 | 299 |
| 111 | | Kenai Lower Mainstem | 2010–2011 | 126 |

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Table 3.–Page 4 of 6.

| Pop. No. | Reporting Group | Location[a] | Sample Year(s) | n |
|---|---|---|---|---|
| 112 | Cook Inlet | Slikok Creek | 2004–2005, 2008 | 137 |
| 113 | | Kasilof River mainstem | 2005 | 316 |
| 114 | | Crooked Creek | 2005, 2011 | 306 |
| 115 | | Ninilchik River | 2006, 2010 | 209 |
| 116 | | Deep Creek | 2009–2010 | 196 |
| 117 | | Stariski Creek | 2011–2012 | 99 |
| 118 | | Anchor River | 2006, 2010 | 250 |
| | | | Cook Inlet Total | 7,884 |
| 119 | Copper | Indian River | 2004–2005 | 50 |
| 120 | | Bone Creek | 2004–2005 | 78 |
| 121 | | E. Fork Chistochina River | 2004 | 132 |
| 122 | | Otter Creek | 2005 | 128 |
| 123 | | Sinona Creek | 2004–2005 | 156 |
| 124 | | Gulkana River | 2004 | 210 |
| 125 | | Mendeltna Creek | 2004 | 132 |
| 126 | | Kiana Creek | 2004 | 75 |
| 127 | | Manker Creek | 2004–2005 | 62 |
| 128 | | Tonsina River | 2004, 2006 | 96 |
| 129 | | Tebay River | 2004–2006 | 68 |
| | | | Copper Total | 1,187 |
| 130 | Southeast AK | Situk River | 1988, 1990–1992 | 127 |
| 131 | | Big Boulder Creek | 1992–1993, 1995, 2004 | 171 |
| 132 | | Tahini River | 1992, 2004 | 168 |
| 133 | | Tahini River - Pullen Creek Hatchery | 2005 | 78 |
| 134 | | Kelsall River | 2004 | 153 |
| 135 | | King Salmon River | 1989–1990, 1993 | 142 |
| 136 | | King Creek | 2003 | 172 |
| 137 | | Chickamin River | 1990, 2003 | 134 |
| 138 | | Little Port Walter | 1993, 2005 | 217 |
| 139 | | Whitman Lake Hatchery | 1992, 1998, 2005 | 378 |
| 140 | | Humpy Creek | 2003 | 123 |
| 141 | | Butler Creek | 2004 | 190 |
| 142 | | Clear Creek | 1989, 2003–2004 | 194 |
| 143 | | Cripple Creek | 1988, 2003 | 142 |
| 144 | | Genes Creek | 1989, 2003–2004 | 93 |
| 145 | | Kerr Creek | 2003–2004 | 151 |
| 146 | | Unuk River - Little Port Walter | 2005 | 149 |
| 147 | | Unuk River - Deer Mountain Hatchery | 1992, 1994 | 147 |
| 148 | | Keta River | 1989, 2003 | 144 |

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Table 3.–Page 5 of 6.

| Pop. No. | Reporting Group | Location[a] | Sample Year(s) | n |
|---|---|---|---|---|
| 149 | Southeast AK | Blossom River | 2004 | 189 |
| 150 | | Andrews Creek | 1989, 2004 | 151 |
| 151 | | Crystal Lake Hatchery | 1992, 1994, 2005 | 396 |
| 152 | | Medvejie Hatchery | 1998, 2005 | 273 |
| 153 | | Hidden Falls Hatchery | 1994, 1998 | 154 |
| 154 | | Macaulay Hatchery | 2005 | 135 |
| 155 | | Klukshu River | 1989–1990 | 170 |
| 156 | | Kowatua River | 1989–1990 | 135 |
| 157 | | Little Tatsemeanie River | 1989–1990, 2005 | 230 |
| 158 | | Upper Nahlin River | 1989–1990 | 130 |
| 159 | | Nakina River | 1989–1990 | 132 |
| 160 | | Dudidontu River | 2005 | 85 |
| 161 | | Tahltan River | 1989 | 95 |
| | | | Southeast AK Total | 5,348 |
| 162 | British Columbia | Kateen River | 2005 | 94 |
| 163 | | Damdochax Creek | 1996 | 65 |
| 164 | | Kincolith Creek | 1996 | 109 |
| 165 | | Kwinageese Creek | 1996 | 62 |
| 166 | | Oweegee Creek | 1996 | 80 |
| 167 | | Bulkley River | 1999 | 91 |
| 168 | | Sustut River | 2001 | 130 |
| 169 | | Ecstall River | 2001–2002 | 86 |
| 170 | | Lower Kalum River | 2001 | 142 |
| 171 | | Lower Atnarko River | 1996 | 143 |
| 172 | | Kitimat River | 1997 | 140 |
| 173 | | Wannock River | 1996 | 144 |
| 174 | | Klinaklini River | 1997 | 83 |
| 175 | | Porteau Cove | 2003 | 154 |
| 176 | | Conuma River | 1997–1998 | 108 |
| 177 | | Marble Creek | 1996, 1999–2000 | 144 |
| 178 | | Nitinat River | 1996 | 99 |
| 179 | | Robertson Creek | 1996, 2003 | 103 |
| 180 | | Sarita River | 1997, 2001 | 155 |
| 181 | | Big Qualicum River | 1996 | 141 |
| 182 | | Nanaimo River | 2002 | 78 |
| 183 | | Quinsam River | 1996 | 119 |
| 184 | | Morkill River (Su) | 2001 | 153 |
| 185 | | Salmon River (Su) | 1997 | 92 |
| 186 | | Torpy River (Su) | 2001 | 85 |

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Table 3.–Page 6 of 6.

| Pop. No. | Reporting Group | Location[a] | Sample Year(s) | n |
|---|---|---|---|---|
| 187 | British Columbia | Chilko River (Su) | 1995–1996, 1999, 2002 | 242 |
| 188 | | Nechako River (Su) | 1996 | 115 |
| 189 | | Quesnel River (Su) | 1996 | 144 |
| 190 | | Stuart River (Su) | 1996 | 161 |
| 191 | | Clearwater River (Su) | 1997 | 147 |
| 192 | | Louis River (Sp) | 2001 | 178 |
| 193 | | Lower Adams River (Fa) | 1996 | 44 |
| 194 | | Lower Thompson River (Fa) | 2001 | 100 |
| 195 | | Middle Shuswap River (Su) | 1986, 1997 | 125 |
| 196 | | Birkenhead River (Sp) | 1997, 1999, 2001–2003 | 91 |
| 197 | | Harrison River | 2002 | 96 |
| | | | British Columbia Total | 4,243 |
| 198 | West Coast US | Makah National Fish Hatchery (Fa) | 2001, 2003 | 79 |
| 199 | | Forks Creek (Fa) | 2005 | 149 |
| 200 | | Upper Skagit River (Su) | 2006 | 89 |
| 201 | | Soos Creek Hatchery (Fa) | 2004 | 117 |
| 202 | | Lyons Ferry Hatchery (Su/Fa) | 2002–2003 | 118 |
| 203 | | Hanford Reach | 2000, 2004, 2006 | 107 |
| 204 | | Lower Deschutes River (Fa) | 2002 | 86 |
| 205 | | Carson Hatchery (Sp) | 2001 | 95 |
| 206 | | McKenzie River (Sp) | 2004 | 94 |
| 207 | | Alsea River (Fa) | 2004 | 69 |
| 208 | | Siuslaw River (Fa) | 2001 | 75 |
| 209 | | Klamath River | 1990, 2006 | 52 |
| 210 | | Eel River (Fa) | 2000–2001 | 83 |
| 211 | | Sacramento River (Wi) | 2005 | 95 |
| | | | West Coast US Total | 1,308 |
| | | | Russia to California Total | 29,001 |

[a] Sp = spring run; Su = summer run; Fa = fall run; Wi = winter run.

Table 4.–Chinook salmon, 2014–2016, Kodiak Management Area, Westward Region: Summary of commercial and sport fishery harvests and number of fish sampled and genotyped by area and temporal strata. Sample goals for all strata in the plan were 380 fish.

| Geographic | District or | Temporal | 2014 | | | | 2015 | | | | 2016 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Area | Section(s) | Stratum | Period | Harvest | Samp. | Anlyz. | Period | Harvest | Samp. | Anlyz. | Period | Harvest | Samp. | Anlyz. |
| NW Kodiak/Afognak | 251, 253, 254 | Early | 6/1–7/5 | 975 | 657 | 379 | 6/1–7/5 | 1,526 | 567 | 380 | 6/1–7/5 | 1,004 | 583 | 379 |
| | | Late | 7/6–8/5 | 846 | 406 | 380 | 7/6–8/5 | 932 | 404 | 380 | 7/6–8/5 | 1,094 | 453 | 379 |
| | | Post Sampling | >8/5 | 806 | Not in Plan | | >8/5 | 384 | Not in Plan | | >8/5 | 496 | Not in Plan | |
| SW Kodiak/Alitak | 255, 256, 257 | Early | 6/1–7/5 | 414 | 287 | 287 | 6/1–7/5 | 511 | 307 | 376[a] | 6/1–7/5 | 347 | 310 | 310 |
| | | Late | 7/6–8/5 | 1,280 | 426 | 378 | 7/6–8/5 | 2,042 | 496 | 378 | 7/6–8/5 | 427 | 291 | 291 |
| | | Post Sampling | >8/5 | 653 | Not in Plan | | >8/5 | 98 | Not in Plan | | >8/5 | 172 | Not in Plan | |
| Eastside Kodiak/Afognak | 258, 259, 252 | Early | 6/1–7/5 | 377 | 294 | 293 | 6/1–7/5 | 1,400 | 434 | 380 | 6/1–7/5 | 446 | 316 | 316 |
| | | Late | 7/6–8/5 | 2,553 | 505 | 379 | 7/6–8/5 | 807 | 285 | 285 | 7/6–8/5 | 779 | 322 | 322 |
| | | Post Sampling | >8/5 | 56 | Not in Plan | | >8/5 | 71 | Not in Plan | | >8/5 | 12 | Not in Plan | |
| Mainland | 262 | Early | 6/1–7/5 | Closed | No Samples | | 6/1–7/5 | Closed | No Samples | | 6/1–7/5 | 1,263 | 461 | 379 |
| | | Late | 7/6–8/5 | 422 | 475 | 379 | 7/6–8/5 | 229 | 282 | 282 | 7/6–8/5 | 1,431 | 453 | 379 |
| | | Post Sampling | >8/5 | 0 | Not in Plan | | >8/5 | 87 | Not in Plan | | >8/5 | 0 | Not in Plan | |
| | Commercial Fishery Total | | | 8,382 | 3,050 | 2,475 | | 8,087 | 2,775 | 2,461 | | 7,471 | 3,189 | 2,755 |
| Sport Fishery | Kodiak Area | Annual | 4/16–8/29 | 8,049 | 417 | 414 | 5/17–8/14 | 6,709 | 282 | 283 | 5/22–8/13 | NA | 441 | 441 |
| Commercial and Sport Fishery Total | | | | 16,431 | 3,467 | 2,889 | | 14,796 | 3,057 | 2,744 | | 7,471 | 3,630 | 3,196 |

[a] In 2015, 70 fish sampled on 7/6/2015 were included in the Early stratum.

Table 5.–Chinook salmon tissue samples collected in the Kodiak Regulatory Area marine sport fishery by statistical area, 2014–2016.

| | Year | | | |
|---|---|---|---|---|
| Stat Area | 2014 | 2015 | 2016 | All Years |
| 25111 | 9 | 0 | 0 | 9 |
| 25190 | 10 | 0 | 0 | 10 |
| 25230 | 5 | 0 | 0 | 5 |
| 25335 | 8 | 7 | 145 | 160 |
| 25410 | 97 | 0 | 0 | 97 |
| 25420 | 3 | 0 | 0 | 3 |
| 25421 | 1 | 0 | 0 | 1 |
| 25440 | 20 | 0 | 0 | 20 |
| 25441 | 1 | 0 | 0 | 1 |
| 25910 | 7 | 5 | 0 | 12 |
| 25921 | 30 | 44 | 167 | 241 |
| 25923 | 0 | 2 | 3 | 5 |
| 25924 | 15 | 26 | 9 | 50 |
| 25925 | 74 | 27 | 34 | 135 |
| 25926 | 0 | 23 | 10 | 33 |
| 25927 | 7 | 28 | 12 | 47 |
| 25933 | 0 | 20 | 0 | 20 |
| 25935 | 0 | 1 | 0 | 1 |
| 25938 | 6 | 27 | 4 | 37 |
| 25939 | 0 | 0 | 1 | 1 |
| 25940 | 64 | 16 | 4 | 84 |
| 25941 | 0 | 9 | 0 | 9 |
| 25946 | 39 | 0 | 50 | 89 |
| No Stat Area | 21 | 47 | 2 | 70 |
| Total | 417 | 282 | 441 | 1140 |

Table 6.–Quality control (QC) results including the number of genotypes compared, discrepancy rates and estimated error rates of the collections genotyped for the KMA Chinook salmon commercial and sport fishery samples.

| | Discrepancy rate[a] | | | |
|---|---|---|---|---|
| Genotypes Compared | Homo-homo | Homo-het | Overall | Error Rate[b] |
| 37,152 | 0.03% | 0.51% | 0.55% | 0.27% |

[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 7.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 975; $n$ = 376) of the Northwest Kodiak/Afognak (District 251, 253, 254), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.3 | 0.0 | 1.3 | 0.00 | 0.4 | 0.4 | 3 | 0 | 12 | 4 | 4 |
| Eastern Bering Sea | 1.9 | 0.7 | 3.6 | 0.00 | 2.0 | 0.9 | 19 | 7 | 35 | 19 | 9 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.3 | 0.42 | 0.0 | 0.1 | 0 | 0 | 3 | 0 | 1 |
| Chignik | 0.0 | 0.0 | 0.3 | 0.42 | 0.0 | 0.1 | 0 | 0 | 3 | 0 | 1 |
| Kodiak | 4.3 | 2.6 | 6.4 | 0.00 | 4.4 | 1.1 | 42 | 26 | 62 | 42 | 11 |
| Cook Inlet | 2.7 | 1.1 | 4.9 | 0.00 | 2.8 | 1.1 | 26 | 11 | 47 | 27 | 11 |
| Copper | 0.0 | 0.0 | 0.5 | 0.34 | 0.1 | 0.2 | 0 | 0 | 5 | 1 | 2 |
| Southeast Alaska/Northeast Gulf of Alaska | 2.4 | 1.1 | 4.3 | 0.00 | 2.5 | 1.0 | 23 | 10 | 42 | 24 | 10 |
| British Columbia | 72.1 | 67.9 | 76.1 | 0.00 | 72.0 | 2.5 | 703 | 662 | 742 | 702 | 24 |
| West Coast US | 15.7 | 12.6 | 19.2 | 0.00 | 15.7 | 2.0 | 153 | 122 | 187 | 153 | 20 |
| | | | | | | | | | Total | 975 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 846; $n$ = 375) of the Northwest Kodiak/Afognak (District 251, 253, 254), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.89 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| Eastern Bering Sea | 0.2 | 0.0 | 1.1 | 0.20 | 0.3 | 0.4 | 2 | 0 | 10 | 3 | 3 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Chignik | 0.6 | 0.0 | 1.6 | 0.10 | 0.6 | 0.5 | 5 | 0 | 14 | 5 | 4 |
| Kodiak | 1.2 | 0.4 | 2.4 | 0.00 | 1.3 | 0.6 | 10 | 3 | 20 | 11 | 5 |
| Cook Inlet | 2.2 | 1.0 | 3.9 | 0.00 | 2.3 | 0.9 | 19 | 8 | 33 | 19 | 8 |
| Copper | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Southeast Alaska/Northeast Gulf of Alaska | 4.6 | 2.6 | 7.1 | 0.00 | 4.7 | 1.4 | 39 | 22 | 60 | 40 | 12 |
| British Columbia | 56.0 | 51.4 | 60.5 | 0.00 | 56.0 | 2.8 | 474 | 435 | 512 | 474 | 23 |
| West Coast US | 34.7 | 30.6 | 39.1 | 0.00 | 34.8 | 2.6 | 294 | 259 | 330 | 294 | 22 |
| | | | | | | | | | Total | 846 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Northwest Kodiak/Afognak (District 251, 253, 254), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.2 | 0.0 | 0.7 | 0.00 | 0.2 | 0.2 | 3 | 0 | 13 | 4 | 4 |
| Eastern Bering Sea | 1.2 | 0.5 | 2.1 | 0.00 | 1.2 | 0.5 | 21 | 9 | 39 | 22 | 9 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.2 | 0.39 | 0.0 | 0.1 | 0 | 0 | 3 | 0 | 1 |
| Chignik | 0.3 | 0.0 | 0.8 | 0.04 | 0.3 | 0.2 | 5 | 0 | 14 | 6 | 4 |
| Kodiak | 2.9 | 1.9 | 4.1 | 0.00 | 2.9 | 0.7 | 52 | 34 | 75 | 53 | 12 |
| Cook Inlet | 2.5 | 1.4 | 3.9 | 0.00 | 2.6 | 0.7 | 46 | 26 | 70 | 47 | 13 |
| Copper | 0.0 | 0.0 | 0.3 | 0.32 | 0.1 | 0.1 | 0 | 0 | 5 | 1 | 2 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.5 | 2.2 | 5.0 | 0.00 | 3.5 | 0.8 | 63 | 41 | 90 | 64 | 15 |
| British Columbia | 64.6 | 61.5 | 67.6 | 0.00 | 64.6 | 1.9 | 1,176 | 1,120 | 1,231 | 1,176 | 34 |
| West Coast US | 24.6 | 22.0 | 27.3 | 0.00 | 24.6 | 1.6 | 447 | 400 | 496 | 448 | 29 |
| | | | | | | | | | Total | 1,821 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,526; $n$ = 378) of the Northwest Kodiak/Afognak (District 251, 253, 254), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Eastern Bering Sea | 0.9 | 0.2 | 2.5 | 0.00 | 1.1 | 0.7 | 14 | 3 | 39 | 17 | 11 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Chignik | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Kodiak | 4.5 | 2.9 | 6.6 | 0.00 | 4.6 | 1.1 | 69 | 45 | 101 | 71 | 17 |
| Cook Inlet | 6.4 | 4.4 | 9.0 | 0.00 | 6.5 | 1.4 | 98 | 66 | 137 | 100 | 21 |
| Copper | 0.0 | 0.0 | 0.4 | 0.76 | 0.1 | 0.2 | 0 | 0 | 6 | 1 | 3 |
| Southeast Alaska/Northeast Gulf of Alaska | 8.5 | 5.5 | 11.8 | 0.00 | 8.5 | 1.9 | 129 | 84 | 179 | 130 | 29 |
| British Columbia | 54.8 | 50.0 | 59.6 | 0.00 | 54.8 | 2.9 | 836 | 763 | 909 | 836 | 44 |
| West Coast US | 24.3 | 20.6 | 28.3 | 0.00 | 24.4 | 2.3 | 371 | 315 | 431 | 372 | 35 |
| | | | | | | | | | Total | 1,526 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 932; $n$ = 378) of the Northwest Kodiak/Afognak (District 251, 253, 254), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.0 | 0.90 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.1 | 0.87 | 0.0 | 0.2 | 0 | 0 | 1 | 0 | 2 |
| Chignik | 0.0 | 0.0 | 0.2 | 0.85 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 1 |
| Kodiak | 3.2 | 1.8 | 5.1 | 0.00 | 3.3 | 1.0 | 30 | 17 | 47 | 31 | 9 |
| Cook Inlet | 4.3 | 2.6 | 6.4 | 0.00 | 4.3 | 1.2 | 40 | 24 | 59 | 40 | 11 |
| Copper | 0.2 | 0.0 | 0.9 | 0.18 | 0.3 | 0.3 | 1 | 0 | 8 | 2 | 3 |
| Southeast Alaska/Northeast Gulf of Alaska | 4.9 | 3.0 | 7.3 | 0.00 | 5.0 | 1.3 | 45 | 28 | 68 | 46 | 12 |
| British Columbia | 52.1 | 47.4 | 56.8 | 0.00 | 52.1 | 2.9 | 486 | 441 | 529 | 486 | 27 |
| West Coast US | 34.9 | 30.6 | 39.5 | 0.00 | 35.0 | 2.7 | 326 | 285 | 368 | 326 | 25 |
| | | | | | | | | | Total | 932 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Northwest Kodiak/Afognak (District 251, 253, 254), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.86 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Eastern Bering Sea | 0.6 | 0.1 | 1.6 | 0.00 | 0.7 | 0.5 | 15 | 3 | 39 | 17 | 11 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.1 | 0.81 | 0.0 | 0.1 | 0 | 0 | 2 | 0 | 2 |
| Chignik | 0.0 | 0.0 | 0.1 | 0.80 | 0.0 | 0.0 | 0 | 0 | 2 | 0 | 1 |
| Kodiak | 4.1 | 2.9 | 5.5 | 0.00 | 4.1 | 0.8 | 100 | 71 | 135 | 101 | 19 |
| Cook Inlet | 5.7 | 4.2 | 7.4 | 0.00 | 5.7 | 1.0 | 139 | 103 | 181 | 140 | 24 |
| Copper | 0.1 | 0.0 | 0.4 | 0.13 | 0.1 | 0.2 | 2 | 0 | 11 | 3 | 4 |
| Southeast Alaska/Northeast Gulf of Alaska | 7.1 | 5.1 | 9.4 | 0.00 | 7.2 | 1.3 | 176 | 126 | 230 | 177 | 31 |
| British Columbia | 53.8 | 50.3 | 57.2 | 0.00 | 53.8 | 2.1 | 1,322 | 1,236 | 1,407 | 1,322 | 52 |
| West Coast US | 28.4 | 25.5 | 31.3 | 0.00 | 28.4 | 1.8 | 697 | 627 | 770 | 698 | 43 |
| | | | | | | | | | Total | 2,458 | |

*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 13.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,004; $n$ = 379) of the Northwest Kodiak/Afognak (District 251, 253, 254), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Bering Sea | 0.7 | 0.0 | 2.0 | 0.04 | 0.8 | 0.6 | 7 | 0 | 20 | 8 | 6 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| Chignik | 0.4 | 0.0 | 1.3 | 0.16 | 0.5 | 0.4 | 4 | 0 | 13 | 5 | 4 |
| Kodiak | 3.2 | 1.8 | 5.2 | 0.00 | 3.3 | 1.1 | 32 | 18 | 53 | 33 | 11 |
| Cook Inlet | 7.8 | 5.5 | 10.5 | 0.00 | 7.9 | 1.5 | 78 | 55 | 106 | 79 | 16 |
| Copper | 0.0 | 0.0 | 0.5 | 0.82 | 0.1 | 0.2 | 0 | 0 | 5 | 1 | 2 |
| Southeast Alaska/Northeast Gulf of Alaska | 12.7 | 9.3 | 16.5 | 0.00 | 12.8 | 2.2 | 127 | 93 | 166 | 128 | 22 |
| British Columbia | 59.6 | 54.7 | 64.4 | 0.00 | 59.6 | 2.9 | 598 | 549 | 646 | 598 | 30 |
| West Coast US | 15.0 | 11.9 | 18.6 | 0.00 | 15.1 | 2.0 | 151 | 120 | 187 | 152 | 20 |
| | | | | | | | | | Total | 1,004 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 1,094; $n$ = 371) of the Northwest Kodiak/Afognak (District 251, 253, 254), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Chignik | 0.3 | 0.0 | 1.2 | 0.05 | 0.4 | 0.4 | 4 | 0 | 13 | 5 | 4 |
| Kodiak | 0.0 | 0.0 | 0.9 | 0.61 | 0.1 | 0.4 | 0 | 0 | 10 | 2 | 4 |
| Cook Inlet | 5.6 | 3.4 | 8.1 | 0.00 | 5.7 | 1.4 | 62 | 37 | 88 | 62 | 15 |
| Copper | 0.0 | 0.0 | 0.4 | 0.79 | 0.1 | 0.2 | 0 | 0 | 4 | 1 | 2 |
| Southeast Alaska/Northeast Gulf of Alaska | 10.3 | 7.2 | 14.0 | 0.00 | 10.4 | 2.1 | 113 | 79 | 153 | 114 | 23 |
| British Columbia | 63.9 | 59.1 | 68.5 | 0.00 | 63.8 | 2.9 | 699 | 646 | 749 | 698 | 31 |
| West Coast US | 19.4 | 15.9 | 23.2 | 0.00 | 19.4 | 2.2 | 212 | 174 | 253 | 213 | 24 |
| | | | | | | | | | Total | 1,094 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Northwest Kodiak/Afognak (District 251, 253, 254), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.85 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Eastern Bering Sea | 0.3 | 0.0 | 1.0 | 0.04 | 0.4 | 0.3 | 7 | 0 | 20 | 8 | 6 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.85 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Chignik | 0.4 | 0.1 | 1.0 | 0.01 | 0.4 | 0.3 | 8 | 1 | 21 | 9 | 6 |
| Kodiak | 1.6 | 0.9 | 2.6 | 0.00 | 1.7 | 0.5 | 34 | 18 | 56 | 35 | 11 |
| Cook Inlet | 6.7 | 5.1 | 8.5 | 0.00 | 6.7 | 1.0 | 141 | 106 | 178 | 141 | 22 |
| Copper | 0.0 | 0.0 | 0.4 | 0.65 | 0.1 | 0.2 | 0 | 0 | 8 | 1 | 3 |
| Southeast Alaska/Northeast Gulf of Alaska | 11.5 | 9.2 | 14.1 | 0.00 | 11.5 | 1.5 | 241 | 192 | 295 | 242 | 31 |
| British Columbia | 61.8 | 58.4 | 65.1 | 0.00 | 61.8 | 2.0 | 1,297 | 1,225 | 1,367 | 1,296 | 43 |
| West Coast US | 17.3 | 15.0 | 19.9 | 0.00 | 17.4 | 1.5 | 364 | 314 | 417 | 365 | 32 |
| | | | | | | | | | Total | 2,098 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 414; $n$ = 278) of the Southwest Kodiak/Alitak (District 255, 256, 257), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.8 | 0.27 | 0.2 | 0.3 | 0 | 0 | 3 | 1 | 1 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.7 | 0.36 | 0.1 | 0.3 | 0 | 0 | 3 | 1 | 1 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.2 | 0.43 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 1 |
| Chignik | 0.0 | 0.0 | 0.2 | 0.43 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 0 |
| Kodiak | 10.0 | 7.2 | 13.3 | 0.00 | 10.1 | 1.9 | 41 | 30 | 55 | 42 | 8 |
| Cook Inlet | 1.1 | 0.1 | 2.9 | 0.02 | 1.2 | 0.9 | 5 | 0 | 12 | 5 | 4 |
| Copper | 0.0 | 0.0 | 0.5 | 0.39 | 0.1 | 0.2 | 0 | 0 | 2 | 0 | 1 |
| Southeast Alaska/Northeast Gulf of Alaska | 6.1 | 3.8 | 8.9 | 0.00 | 6.2 | 1.5 | 25 | 16 | 37 | 26 | 6 |
| British Columbia | 51.2 | 46.1 | 56.4 | 0.00 | 51.2 | 3.1 | 212 | 191 | 234 | 212 | 13 |
| West Coast US | 30.8 | 26.1 | 35.7 | 0.00 | 30.8 | 2.9 | 127 | 108 | 148 | 128 | 12 |
| | | | | | | | | | Total | 414 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 1,280; $n$ = 374) of the Southwest Kodiak/Alitak (District 255, 256, 257), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Bering Sea | 0.0 | 0.0 | 2.1 | 0.56 | 0.5 | 0.8 | 0 | 0 | 27 | 6 | 10 |
| North Alaska Peninsula | 0.0 | 0.0 | 1.8 | 0.47 | 0.4 | 0.6 | 0 | 0 | 22 | 5 | 8 |
| Chignik | 0.0 | 0.0 | 0.2 | 0.86 | 0.0 | 0.1 | 0 | 0 | 2 | 0 | 2 |
| Kodiak | 1.0 | 0.4 | 2.2 | 0.00 | 1.1 | 0.6 | 13 | 5 | 28 | 14 | 7 |
| Cook Inlet | 1.4 | 0.3 | 2.9 | 0.03 | 1.5 | 0.8 | 17 | 4 | 38 | 19 | 10 |
| Copper | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| Southeast Alaska/Northeast Gulf of Alaska | 2.9 | 1.2 | 5.0 | 0.00 | 3.0 | 1.2 | 37 | 16 | 64 | 38 | 15 |
| British Columbia | 54.5 | 49.6 | 59.2 | 0.00 | 54.5 | 2.9 | 697 | 635 | 758 | 697 | 37 |
| West Coast US | 39.0 | 34.5 | 43.7 | 0.00 | 39.1 | 2.8 | 500 | 442 | 560 | 500 | 36 |
| | | | | | | | | | Total | 1,280 | |

*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 estimates of stock composition (%) and stock-specific harvest for the Southwest Kodiak/Alitak (District 255, 256, 257), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.2 | 0.29 | 0.0 | 0.1 | 0 | 0 | 4 | 1 | 1 |
| Eastern Bering Sea | 0.0 | 0.0 | 1.6 | 0.23 | 0.4 | 0.6 | 1 | 0 | 27 | 7 | 10 |
| North Alaska Peninsula | 0.1 | 0.0 | 1.3 | 0.24 | 0.3 | 0.5 | 1 | 0 | 23 | 5 | 8 |
| Chignik | 0.0 | 0.0 | 0.2 | 0.43 | 0.0 | 0.1 | 0 | 0 | 3 | 1 | 2 |
| Kodiak | 3.3 | 2.4 | 4.4 | 0.00 | 3.3 | 0.6 | 55 | 40 | 75 | 56 | 11 |
| Cook Inlet | 1.3 | 0.5 | 2.6 | 0.00 | 1.4 | 0.6 | 23 | 8 | 44 | 24 | 11 |
| Copper | 0.0 | 0.0 | 0.1 | 0.42 | 0.0 | 0.1 | 0 | 0 | 2 | 0 | 1 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.7 | 2.3 | 5.4 | 0.00 | 3.7 | 0.9 | 62 | 39 | 91 | 63 | 16 |
| British Columbia | 53.7 | 49.8 | 57.5 | 0.00 | 53.7 | 2.3 | 909 | 843 | 974 | 909 | 40 |
| West Coast US | 37.0 | 33.4 | 40.8 | 0.00 | 37.1 | 2.2 | 627 | 566 | 690 | 628 | 38 |
| | | | | | | | | | Total | 1,694 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 511; $n$ = 365) of the Southwest Kodiak/Alitak (District 255, 256, 257), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Chignik | 0.0 | 0.0 | 0.1 | 0.89 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| Kodiak | 24.9 | 21.2 | 28.8 | 0.00 | 24.9 | 2.3 | 127 | 108 | 147 | 127 | 12 |
| Cook Inlet | 2.5 | 1.2 | 4.4 | 0.00 | 2.6 | 1.0 | 13 | 6 | 23 | 13 | 5 |
| Copper | 0.0 | 0.0 | 0.1 | 0.88 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 0 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.2 | 1.1 | 5.6 | 0.00 | 3.3 | 1.4 | 16 | 6 | 29 | 17 | 7 |
| British Columbia | 33.8 | 29.3 | 38.6 | 0.00 | 33.9 | 2.8 | 173 | 150 | 197 | 173 | 14 |
| West Coast US | 35.2 | 31.0 | 39.7 | 0.00 | 35.3 | 2.6 | 180 | 158 | 203 | 180 | 13 |
| | | | | | | | | | Total | 511 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 2,042; $n$ = 371) of the Southwest Kodiak/Alitak (District 255, 256, 257), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.0 | 0.90 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 2 |
| North Alaska Peninsula | 0.0 | 0.0 | 1.0 | 0.67 | 0.2 | 0.4 | 0 | 0 | 21 | 3 | 8 |
| Chignik | 0.0 | 0.0 | 0.6 | 0.61 | 0.1 | 0.2 | 0 | 0 | 11 | 2 | 4 |
| Kodiak | 1.2 | 0.3 | 2.5 | 0.00 | 1.3 | 0.7 | 24 | 7 | 51 | 26 | 13 |
| Cook Inlet | 1.4 | 0.6 | 2.7 | 0.00 | 1.5 | 0.7 | 29 | 12 | 56 | 31 | 14 |
| Copper | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.4 | 1.7 | 5.8 | 0.00 | 3.5 | 1.2 | 69 | 35 | 118 | 72 | 25 |
| British Columbia | 63.1 | 58.5 | 67.6 | 0.00 | 63.1 | 2.8 | 1,289 | 1,195 | 1,380 | 1,288 | 56 |
| West Coast US | 30.3 | 26.2 | 34.6 | 0.00 | 30.3 | 2.6 | 619 | 535 | 707 | 620 | 52 |
| | | | | | | | | | Total | 2,042 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Southwest Kodiak/Alitak (District 255, 256, 257), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.86 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.0 | 0.84 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 2 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.8 | 0.63 | 0.1 | 0.3 | 0 | 0 | 21 | 4 | 8 |
| Chignik | 0.0 | 0.0 | 0.4 | 0.55 | 0.1 | 0.2 | 0 | 0 | 11 | 2 | 4 |
| Kodiak | 6.0 | 4.9 | 7.2 | 0.00 | 6.0 | 0.7 | 152 | 126 | 184 | 153 | 18 |
| Cook Inlet | 1.7 | 0.9 | 2.8 | 0.00 | 1.7 | 0.6 | 42 | 23 | 70 | 44 | 15 |
| Copper | 0.0 | 0.0 | 0.0 | 0.82 | 0.0 | 0.0 | 0 | 0 | 1 | 0 | 1 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.4 | 2.0 | 5.3 | 0.00 | 3.5 | 1.0 | 86 | 50 | 136 | 88 | 26 |
| British Columbia | 57.3 | 53.5 | 61.0 | 0.00 | 57.2 | 2.3 | 1,462 | 1,365 | 1,557 | 1,461 | 58 |
| West Coast US | 31.3 | 27.9 | 34.8 | 0.00 | 31.3 | 2.1 | 799 | 712 | 890 | 800 | 54 |
| | | | | | | | | | Total | 2,553 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 347; $n$ = 308) of the Southwest Kodiak/Alitak (District 255, 256, 257), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.7 | 0.59 | 0.1 | 0.3 | 0 | 0 | 2 | 0 | 1 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Chignik | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Kodiak | 2.9 | 1.5 | 4.9 | 0.00 | 3.0 | 1.0 | 10 | 5 | 17 | 10 | 4 |
| Cook Inlet | 1.4 | 0.5 | 3.0 | 0.00 | 1.5 | 0.8 | 5 | 2 | 10 | 5 | 3 |
| Copper | 0.0 | 0.0 | 1.4 | 0.46 | 0.3 | 0.5 | 0 | 0 | 5 | 1 | 2 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.1 | 1.3 | 5.5 | 0.01 | 3.2 | 1.3 | 11 | 4 | 19 | 11 | 5 |
| British Columbia | 67.1 | 62.3 | 71.8 | 0.00 | 67.1 | 2.9 | 233 | 216 | 249 | 233 | 10 |
| West Coast US | 24.6 | 20.5 | 29.0 | 0.00 | 24.6 | 2.6 | 85 | 71 | 101 | 86 | 9 |
| | | | | | | | | | Total | 347 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 427; $n$ = 267) of the Southwest Kodiak/Alitak (District 255, 256, 257), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 0 |
| Chignik | 0.1 | 0.0 | 0.9 | 0.38 | 0.2 | 0.3 | 0 | 0 | 4 | 1 | 1 |
| Kodiak | 1.1 | 0.4 | 2.6 | 0.00 | 1.3 | 0.7 | 5 | 2 | 11 | 5 | 3 |
| Cook Inlet | 2.5 | 1.2 | 4.4 | 0.00 | 2.6 | 1.0 | 11 | 5 | 19 | 11 | 4 |
| Copper | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Southeast Alaska/Northeast Gulf of Alaska | 1.8 | 0.1 | 4.3 | 0.03 | 2.0 | 1.3 | 8 | 1 | 18 | 8 | 5 |
| British Columbia | 69.2 | 63.7 | 74.3 | 0.00 | 69.1 | 3.2 | 295 | 272 | 317 | 295 | 14 |
| West Coast US | 24.7 | 20.1 | 29.7 | 0.00 | 24.8 | 2.9 | 106 | 86 | 127 | 106 | 13 |
| | | | | | | | | | Total | 427 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Southwest Kodiak/Alitak (District 255, 256, 257), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.3 | 0.55 | 0.1 | 0.1 | 0 | 0 | 2 | 0 | 1 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.0 | 0.85 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.85 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Chignik | 0.0 | 0.0 | 0.5 | 0.35 | 0.1 | 0.2 | 0 | 0 | 4 | 1 | 1 |
| Kodiak | 2.0 | 1.2 | 3.1 | 0.00 | 2.1 | 0.6 | 15 | 9 | 24 | 16 | 5 |
| Cook Inlet | 2.1 | 1.2 | 3.3 | 0.00 | 2.1 | 0.7 | 16 | 9 | 26 | 16 | 5 |
| Copper | 0.0 | 0.0 | 0.6 | 0.42 | 0.2 | 0.2 | 0 | 0 | 5 | 1 | 2 |
| Southeast Alaska/Northeast Gulf of Alaska | 2.5 | 1.2 | 4.1 | 0.00 | 2.5 | 0.9 | 19 | 9 | 32 | 20 | 7 |
| British Columbia | 68.2 | 64.6 | 71.8 | 0.00 | 68.2 | 2.2 | 528 | 500 | 556 | 528 | 17 |
| West Coast US | 24.7 | 21.5 | 28.0 | 0.00 | 24.7 | 2.0 | 191 | 167 | 217 | 191 | 15 |
| | | | | | | | | | Total | 774 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 377; $n$ = 287) of the Eastside Kodiak/Afognak (District 252, 258, 259), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.6 | 0.1 | 1.7 | 0.00 | 0.7 | 0.5 | 2 | 0 | 6 | 3 | 2 |
| Eastern Bering Sea | 2.6 | 1.2 | 4.6 | 0.00 | 2.7 | 1.1 | 10 | 4 | 17 | 10 | 4 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.3 | 0.42 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 1 |
| Chignik | 0.6 | 0.1 | 1.7 | 0.01 | 0.7 | 0.5 | 2 | 0 | 6 | 3 | 2 |
| Kodiak | 4.2 | 2.4 | 6.7 | 0.00 | 4.3 | 1.3 | 16 | 9 | 25 | 16 | 5 |
| Cook Inlet | 0.3 | 0.0 | 1.8 | 0.15 | 0.5 | 0.6 | 1 | 0 | 7 | 2 | 2 |
| Copper | 0.0 | 0.0 | 0.4 | 0.40 | 0.1 | 0.2 | 0 | 0 | 2 | 0 | 1 |
| Southeast Alaska/Northeast Gulf of Alaska | 4.2 | 1.9 | 7.3 | 0.00 | 4.3 | 1.6 | 16 | 7 | 27 | 16 | 6 |
| British Columbia | 51.2 | 45.9 | 56.6 | 0.00 | 51.2 | 3.3 | 193 | 173 | 213 | 193 | 12 |
| West Coast US | 35.3 | 30.5 | 40.3 | 0.00 | 35.4 | 3.0 | 133 | 115 | 152 | 133 | 11 |
| | | | | | | | | | Total | 377 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 2,553; $n$ = 375) of the Eastside Kodiak/Afognak (District 252, 258, 259), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.4 | 0.1 | 1.3 | 0.00 | 0.5 | 0.4 | 11 | 2 | 32 | 13 | 10 |
| Eastern Bering Sea | 2.7 | 1.3 | 4.6 | 0.00 | 2.8 | 1.0 | 69 | 34 | 116 | 71 | 25 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 2 |
| Chignik | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Kodiak | 0.1 | 0.0 | 0.8 | 0.28 | 0.2 | 0.3 | 2 | 0 | 21 | 5 | 8 |
| Cook Inlet | 4.0 | 2.4 | 6.1 | 0.00 | 4.1 | 1.1 | 102 | 61 | 156 | 105 | 29 |
| Copper | 0.2 | 0.0 | 1.2 | 0.26 | 0.3 | 0.4 | 4 | 0 | 30 | 8 | 11 |
| Southeast Alaska/Northeast Gulf of Alaska | 2.6 | 0.8 | 5.4 | 0.01 | 2.8 | 1.4 | 67 | 20 | 137 | 71 | 36 |
| British Columbia | 51.7 | 46.9 | 56.6 | 0.00 | 51.7 | 2.9 | 1,321 | 1,197 | 1,444 | 1,320 | 75 |
| West Coast US | 37.5 | 33.2 | 41.9 | 0.00 | 37.5 | 2.6 | 958 | 848 | 1,071 | 959 | 68 |
| | | | | | | | | | Total | 2,553 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Eastside Kodiak/Afognak (District 252, 258, 259), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.5 | 0.1 | 1.2 | 0.00 | 0.6 | 0.3 | 14 | 4 | 35 | 16 | 10 |
| Eastern Bering Sea | 2.7 | 1.5 | 4.3 | 0.00 | 2.8 | 0.9 | 79 | 43 | 127 | 81 | 26 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.1 | 0.47 | 0.0 | 0.1 | 0 | 0 | 2 | 0 | 2 |
| Chignik | 0.1 | 0.0 | 0.2 | 0.01 | 0.1 | 0.1 | 2 | 0 | 7 | 3 | 2 |
| Kodiak | 0.7 | 0.4 | 1.3 | 0.00 | 0.7 | 0.3 | 20 | 10 | 39 | 21 | 9 |
| Cook Inlet | 3.6 | 2.1 | 5.4 | 0.00 | 3.6 | 1.0 | 104 | 62 | 159 | 107 | 29 |
| Copper | 0.2 | 0.0 | 1.0 | 0.12 | 0.3 | 0.4 | 5 | 0 | 30 | 8 | 11 |
| Southeast Alaska/Northeast Gulf of Alaska | 2.9 | 1.2 | 5.3 | 0.00 | 3.0 | 1.2 | 84 | 35 | 154 | 88 | 37 |
| British Columbia | 51.7 | 47.4 | 55.9 | 0.00 | 51.7 | 2.6 | 1,514 | 1,388 | 1,639 | 1,513 | 76 |
| West Coast US | 37.2 | 33.5 | 41.1 | 0.00 | 37.3 | 2.3 | 1,091 | 981 | 1,206 | 1,092 | 69 |
| | | | | | | | | | Total | 2,930 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,400; $n$ = 373) of the Eastside Kodiak/Afognak (District 252, 258, 259), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.4 | 0.1 | 1.2 | 0.00 | 0.5 | 0.4 | 6 | 1 | 17 | 7 | 5 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.1 | 0.79 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 1 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.1 | 0.88 | 0.0 | 0.2 | 0 | 0 | 1 | 1 | 3 |
| Chignik | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Kodiak | 3.1 | 1.6 | 5.0 | 0.00 | 3.2 | 1.0 | 43 | 23 | 70 | 44 | 14 |
| Cook Inlet | 7.8 | 5.4 | 10.5 | 0.00 | 7.8 | 1.5 | 109 | 76 | 147 | 110 | 22 |
| Copper | 0.1 | 0.0 | 1.1 | 0.40 | 0.3 | 0.4 | 1 | 0 | 15 | 4 | 5 |
| Southeast Alaska/Northeast Gulf of Alaska | 4.8 | 2.7 | 7.4 | 0.00 | 4.9 | 1.4 | 67 | 38 | 104 | 68 | 20 |
| British Columbia | 36.5 | 31.8 | 41.4 | 0.00 | 36.5 | 2.9 | 511 | 445 | 579 | 511 | 41 |
| West Coast US | 46.8 | 42.1 | 51.6 | 0.00 | 46.8 | 2.9 | 655 | 589 | 722 | 655 | 40 |
| | | | | | | | | | Total | 1,400 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 807; $n$ = 278) of the Eastside Kodiak/Afognak (District 252, 258, 259), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.90 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.89 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| Chignik | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 0 |
| Kodiak | 4.3 | 2.5 | 6.8 | 0.00 | 4.4 | 1.3 | 35 | 20 | 55 | 36 | 11 |
| Cook Inlet | 1.3 | 0.3 | 3.1 | 0.00 | 1.4 | 0.9 | 10 | 2 | 25 | 12 | 7 |
| Copper | 0.0 | 0.0 | 1.1 | 0.50 | 0.2 | 0.4 | 0 | 0 | 9 | 2 | 3 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.5 | 1.4 | 6.3 | 0.01 | 3.6 | 1.5 | 28 | 11 | 51 | 29 | 12 |
| British Columbia | 49.4 | 43.9 | 54.9 | 0.00 | 49.4 | 3.3 | 399 | 354 | 443 | 399 | 27 |
| West Coast US | 40.7 | 35.6 | 46.0 | 0.00 | 40.8 | 3.2 | 329 | 288 | 371 | 329 | 25 |
| | | | | | | | | | Total | 807 | |

*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 estimates of stock composition (%) and stock-specific harvest for the Eastside Kodiak/Afognak (District 252, 258, 259), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.3 | 0.0 | 0.8 | 0.00 | 0.3 | 0.2 | 6 | 1 | 17 | 7 | 5 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.1 | 0.73 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 2 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.2 | 0.79 | 0.0 | 0.2 | 0 | 0 | 4 | 1 | 3 |
| Chignik | 0.0 | 0.0 | 0.0 | 0.85 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Kodiak | 3.6 | 2.4 | 5.0 | 0.00 | 3.6 | 0.8 | 79 | 53 | 111 | 80 | 18 |
| Cook Inlet | 5.5 | 3.9 | 7.3 | 0.00 | 5.5 | 1.0 | 120 | 86 | 160 | 121 | 23 |
| Copper | 0.2 | 0.0 | 0.8 | 0.20 | 0.3 | 0.3 | 4 | 0 | 19 | 6 | 6 |
| Southeast Alaska/Northeast Gulf of Alaska | 4.4 | 2.8 | 6.3 | 0.00 | 4.4 | 1.1 | 97 | 61 | 139 | 98 | 24 |
| British Columbia | 41.2 | 37.6 | 44.9 | 0.00 | 41.2 | 2.2 | 910 | 830 | 991 | 910 | 49 |
| West Coast US | 44.6 | 41.1 | 48.1 | 0.00 | 44.6 | 2.2 | 984 | 906 | 1,063 | 984 | 48 |
| | | | | | | | | | Total | 2,207 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 446; $n$ = 313) of the Eastside Kodiak/Afognak (District 252, 258, 259), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Bering Sea | 2.2 | 1.0 | 4.1 | 0.00 | 2.3 | 1.0 | 10 | 4 | 18 | 10 | 4 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 0 |
| Chignik | 0.3 | 0.0 | 1.3 | 0.03 | 0.4 | 0.4 | 1 | 0 | 6 | 2 | 2 |
| Kodiak | 2.6 | 1.2 | 4.7 | 0.00 | 2.8 | 1.1 | 12 | 5 | 21 | 12 | 5 |
| Cook Inlet | 2.3 | 1.0 | 4.1 | 0.00 | 2.4 | 1.0 | 10 | 4 | 18 | 11 | 4 |
| Copper | 0.9 | 0.2 | 2.3 | 0.02 | 1.1 | 0.7 | 4 | 1 | 10 | 5 | 3 |
| Southeast Alaska/Northeast Gulf of Alaska | 6.4 | 3.7 | 10.0 | 0.00 | 6.6 | 1.9 | 29 | 16 | 44 | 29 | 9 |
| British Columbia | 57.0 | 51.5 | 62.4 | 0.00 | 57.0 | 3.3 | 254 | 230 | 278 | 254 | 15 |
| West Coast US | 27.4 | 23.1 | 32.1 | 0.00 | 27.5 | 2.7 | 122 | 103 | 143 | 123 | 12 |
| | | | | | | | | | Total | 446 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 779; $n$ = 319) of the Eastside Kodiak/Afognak (District 252, 258, 259), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.0 | 0.82 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.90 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| Chignik | 0.0 | 0.0 | 0.6 | 0.63 | 0.1 | 0.3 | 0 | 0 | 5 | 1 | 2 |
| Kodiak | 2.8 | 1.4 | 4.8 | 0.00 | 2.9 | 1.0 | 22 | 11 | 38 | 23 | 8 |
| Cook Inlet | 3.8 | 2.2 | 6.0 | 0.00 | 3.9 | 1.2 | 30 | 17 | 47 | 30 | 9 |
| Copper | 0.3 | 0.0 | 1.6 | 0.31 | 0.5 | 0.6 | 2 | 0 | 13 | 4 | 4 |
| Southeast Alaska/Northeast Gulf of Alaska | 1.3 | 0.0 | 3.6 | 0.09 | 1.4 | 1.2 | 10 | 0 | 28 | 11 | 9 |
| British Columbia | 51.5 | 46.1 | 56.9 | 0.00 | 51.5 | 3.2 | 401 | 359 | 443 | 401 | 25 |
| West Coast US | 39.5 | 34.6 | 44.7 | 0.00 | 39.6 | 3.1 | 308 | 269 | 348 | 308 | 24 |
| | | | | | | | | | Total | 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 33.–Annual estimates of stock composition (%) and stock-specific harvest for the Eastside Kodiak/Afognak (District 252, 258, 259), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.86 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Eastern Bering Sea | 0.8 | 0.4 | 1.5 | 0.00 | 0.9 | 0.4 | 10 | 4 | 18 | 10 | 4 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.83 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 1 |
| Chignik | 0.2 | 0.0 | 0.7 | 0.02 | 0.2 | 0.2 | 2 | 0 | 8 | 3 | 3 |
| Kodiak | 2.8 | 1.7 | 4.2 | 0.00 | 2.9 | 0.8 | 34 | 21 | 52 | 35 | 9 |
| Cook Inlet | 3.3 | 2.1 | 4.8 | 0.00 | 3.4 | 0.8 | 40 | 26 | 59 | 41 | 10 |
| Copper | 0.6 | 0.1 | 1.5 | 0.00 | 0.7 | 0.4 | 8 | 2 | 19 | 9 | 5 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.2 | 1.8 | 5.1 | 0.00 | 3.3 | 1.0 | 39 | 22 | 63 | 40 | 13 |
| British Columbia | 53.5 | 49.5 | 57.4 | 0.00 | 53.5 | 2.4 | 655 | 607 | 704 | 655 | 29 |
| West Coast US | 35.1 | 31.6 | 38.8 | 0.00 | 35.2 | 2.2 | 431 | 387 | 475 | 431 | 27 |
| | | | | | | | | | Total | 1,225 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 422; $n$ = 362) of the Mainland (District 262), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.2 | 0.0 | 0.9 | 0.01 | 0.3 | 0.3 | 1 | 0 | 4 | 1 | 1 |
| Eastern Bering Sea | 1.1 | 0.3 | 2.4 | 0.00 | 1.2 | 0.6 | 5 | 1 | 10 | 5 | 3 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.2 | 0.44 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 0 |
| Chignik | 0.1 | 0.0 | 0.8 | 0.13 | 0.2 | 0.3 | 1 | 0 | 3 | 1 | 1 |
| Kodiak | 0.9 | 0.2 | 2.0 | 0.00 | 1.0 | 0.6 | 4 | 1 | 9 | 4 | 2 |
| Cook Inlet | 1.5 | 0.6 | 3.0 | 0.00 | 1.6 | 0.7 | 6 | 2 | 13 | 7 | 3 |
| Copper | 0.0 | 0.0 | 0.2 | 0.43 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 0 |
| Southeast Alaska/Northeast Gulf of Alaska | 4.8 | 1.4 | 9.2 | 0.00 | 5.0 | 2.4 | 20 | 6 | 39 | 21 | 10 |
| British Columbia | 51.2 | 45.3 | 57.0 | 0.00 | 51.2 | 3.6 | 216 | 191 | 241 | 216 | 15 |
| West Coast US | 39.5 | 35.0 | 44.1 | 0.00 | 39.5 | 2.8 | 167 | 148 | 186 | 167 | 12 |
| | | | | | | | | | Total | 422 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Mainland (District 262), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.2 | 0.0 | 0.9 | 0.01 | 0.3 | 0.3 | 1 | 0 | 4 | 1 | 1 |
| Eastern Bering Sea | 1.1 | 0.3 | 2.4 | 0.00 | 1.2 | 0.6 | 5 | 1 | 10 | 5 | 3 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.2 | 0.44 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 0 |
| Chignik | 0.1 | 0.0 | 0.8 | 0.13 | 0.2 | 0.3 | 1 | 0 | 3 | 1 | 1 |
| Kodiak | 0.9 | 0.2 | 2.0 | 0.00 | 1.0 | 0.6 | 4 | 1 | 9 | 4 | 2 |
| Cook Inlet | 1.5 | 0.6 | 3.0 | 0.00 | 1.6 | 0.7 | 6 | 2 | 13 | 7 | 3 |
| Copper | 0.0 | 0.0 | 0.2 | 0.43 | 0.0 | 0.1 | 0 | 0 | 1 | 0 | 0 |
| Southeast Alaska/Northeast Gulf of Alaska | 4.8 | 1.4 | 9.2 | 0.00 | 5.0 | 2.4 | 20 | 6 | 39 | 21 | 10 |
| British Columbia | 51.2 | 45.3 | 57.0 | 0.00 | 51.2 | 3.6 | 216 | 191 | 241 | 216 | 15 |
| West Coast US | 39.5 | 35.0 | 44.1 | 0.00 | 39.5 | 2.8 | 167 | 148 | 186 | 167 | 12 |
| | | | | | | | | | Total | 422 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 229; $n$ = 277) of the Mainland (District 262), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.3 | 0.0 | 1.1 | 0.00 | 0.4 | 0.4 | 1 | 0 | 2 | 1 | 1 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.3 | 0.84 | 0.0 | 0.2 | 0 | 0 | 1 | 0 | 0 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Chignik | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Kodiak | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Cook Inlet | 12.8 | 9.7 | 16.3 | 0.00 | 12.9 | 2.0 | 29 | 22 | 37 | 29 | 5 |
| Copper | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 0 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.0 | 0.3 | 5.6 | 0.03 | 3.0 | 1.5 | 7 | 1 | 13 | 7 | 4 |
| British Columbia | 64.0 | 58.6 | 69.4 | 0.00 | 64.0 | 3.3 | 147 | 134 | 159 | 147 | 8 |
| West Coast US | 19.6 | 15.5 | 24.2 | 0.00 | 19.7 | 2.6 | 45 | 35 | 55 | 45 | 6 |
| | | | | | | | | | Total | 229 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Mainland (District 262), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.3 | 0.0 | 1.1 | 0.00 | 0.4 | 0.4 | 1 | 0 | 2 | 1 | 1 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.3 | 0.84 | 0.0 | 0.2 | 0 | 0 | 1 | 0 | 0 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Chignik | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Kodiak | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Cook Inlet | 12.8 | 9.7 | 16.3 | 0.00 | 12.9 | 2.0 | 29 | 22 | 37 | 29 | 5 |
| Copper | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 0 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.0 | 0.3 | 5.6 | 0.03 | 3.0 | 1.5 | 7 | 1 | 13 | 7 | 4 |
| British Columbia | 64.0 | 58.6 | 69.4 | 0.00 | 64.0 | 3.3 | 147 | 134 | 159 | 147 | 8 |
| West Coast US | 19.6 | 15.5 | 24.2 | 0.00 | 19.7 | 2.6 | 45 | 35 | 55 | 45 | 6 |
| | | | | | | | | | Total | 229 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,263; $n$ = 368) of the Mainland (District 262), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.2 | 0.43 | 0.0 | 0.1 | 0 | 0 | 3 | 1 | 2 |
| Eastern Bering Sea | 2.1 | 1.0 | 3.7 | 0.00 | 2.2 | 0.8 | 26 | 12 | 47 | 28 | 11 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.5 | 0.38 | 0.1 | 0.2 | 0 | 0 | 7 | 1 | 3 |
| Chignik | 0.2 | 0.0 | 0.9 | 0.03 | 0.3 | 0.3 | 3 | 0 | 11 | 4 | 4 |
| Kodiak | 0.3 | 0.0 | 1.3 | 0.02 | 0.5 | 0.4 | 4 | 0 | 17 | 6 | 5 |
| Cook Inlet | 1.9 | 0.7 | 3.7 | 0.00 | 2.0 | 0.9 | 24 | 8 | 46 | 25 | 12 |
| Copper | 0.2 | 0.0 | 1.8 | 0.21 | 0.5 | 0.6 | 2 | 0 | 23 | 6 | 8 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.6 | 1.6 | 6.3 | 0.00 | 3.8 | 1.4 | 46 | 21 | 80 | 47 | 18 |
| British Columbia | 46.6 | 41.8 | 51.4 | 0.00 | 46.6 | 2.9 | 588 | 528 | 649 | 588 | 36 |
| West Coast US | 44.1 | 39.5 | 48.7 | 0.00 | 44.1 | 2.8 | 557 | 499 | 615 | 557 | 35 |
| | | | | | | | | | Total | 1,263 | |

*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.–Estimates of stock composition (%) and stock-specific harvest for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 1,431; $n$ = 357) of the Mainland (District 262), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 1 |
| Eastern Bering Sea | 0.0 | 0.0 | 1.1 | 0.70 | 0.1 | 0.4 | 0 | 0 | 15 | 2 | 6 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 1 |
| Chignik | 0.7 | 0.2 | 1.7 | 0.00 | 0.7 | 0.5 | 9 | 2 | 24 | 11 | 7 |
| Kodiak | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 | 0 | 0 | 0 | 0 | 0 |
| Cook Inlet | 2.5 | 1.3 | 4.2 | 0.00 | 2.6 | 0.9 | 36 | 18 | 60 | 37 | 13 |
| Copper | 0.0 | 0.0 | 0.2 | 0.84 | 0.0 | 0.1 | 0 | 0 | 3 | 0 | 2 |
| Southeast Alaska/Northeast Gulf of Alaska | 5.1 | 3.1 | 7.9 | 0.00 | 5.3 | 1.5 | 74 | 44 | 113 | 75 | 21 |
| British Columbia | 54.1 | 49.1 | 58.9 | 0.00 | 54.1 | 3.0 | 774 | 703 | 843 | 774 | 42 |
| West Coast US | 37.1 | 32.7 | 41.8 | 0.00 | 37.2 | 2.8 | 531 | 467 | 598 | 532 | 40 |
| | | | | | | | | | Total | 1,431 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Mainland (District 262), 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.1 | 0.44 | 0.0 | 0.1 | 0 | 0 | 3 | 1 | 2 |
| Eastern Bering Sea | 1.0 | 0.5 | 1.9 | 0.00 | 1.1 | 0.5 | 28 | 13 | 52 | 30 | 12 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.3 | 0.38 | 0.0 | 0.1 | 0 | 0 | 7 | 1 | 3 |
| Chignik | 0.5 | 0.2 | 1.1 | 0.00 | 0.5 | 0.3 | 13 | 4 | 29 | 14 | 8 |
| Kodiak | 0.2 | 0.0 | 0.6 | 0.02 | 0.2 | 0.2 | 4 | 0 | 17 | 6 | 5 |
| Cook Inlet | 2.3 | 1.3 | 3.4 | 0.00 | 2.3 | 0.6 | 61 | 36 | 93 | 62 | 17 |
| Copper | 0.1 | 0.0 | 0.9 | 0.20 | 0.2 | 0.3 | 3 | 0 | 24 | 6 | 8 |
| Southeast Alaska/Northeast Gulf of Alaska | 4.5 | 3.0 | 6.4 | 0.00 | 4.6 | 1.0 | 121 | 81 | 172 | 123 | 28 |
| British Columbia | 50.6 | 47.1 | 54.0 | 0.00 | 50.6 | 2.1 | 1,362 | 1,270 | 1,454 | 1,362 | 56 |
| West Coast US | 40.4 | 37.2 | 43.7 | 0.00 | 40.4 | 2.0 | 1,088 | 1,002 | 1,177 | 1,089 | 53 |
| | | | | | | | | | Total | 2,694 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for KMA, 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.3 | 0.1 | 0.6 | 0.00 | 0.3 | 0.2 | 21 | 8 | 43 | 22 | 11 |
| Eastern Bering Sea | 1.6 | 1.0 | 2.4 | 0.00 | 1.7 | 0.4 | 113 | 71 | 167 | 115 | 29 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.4 | 0.04 | 0.1 | 0.1 | 3 | 0 | 24 | 6 | 9 |
| Chignik | 0.1 | 0.0 | 0.3 | 0.00 | 0.1 | 0.1 | 9 | 3 | 20 | 10 | 5 |
| Kodiak | 1.9 | 1.5 | 2.4 | 0.00 | 2.0 | 0.3 | 134 | 106 | 167 | 135 | 19 |
| Cook Inlet | 2.6 | 1.9 | 3.5 | 0.00 | 2.7 | 0.5 | 182 | 131 | 243 | 184 | 34 |
| Copper | 0.1 | 0.0 | 0.5 | 0.01 | 0.1 | 0.2 | 6 | 0 | 32 | 10 | 11 |
| Southeast Alaska/Northeast Gulf of Alaska | 3.4 | 2.5 | 4.6 | 0.00 | 3.4 | 0.6 | 233 | 170 | 313 | 236 | 44 |
| British Columbia | 55.6 | 53.3 | 57.8 | 0.00 | 55.5 | 1.4 | 3,815 | 3,660 | 3,967 | 3,815 | 93 |
| West Coast US | 34.0 | 32.0 | 36.0 | 0.00 | 34.0 | 1.2 | 2,333 | 2,196 | 2,474 | 2,334 | 85 |
| | | | | | | | | | Total | 6,867 | |

*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 estimates of stock composition (%) and stock-specific harvest for KMA, 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.1 | 0.0 | 0.3 | 0.00 | 0.1 | 0.1 | 7 | 1 | 19 | 8 | 5 |
| Eastern Bering Sea | 0.2 | 0.0 | 0.5 | 0.00 | 0.2 | 0.2 | 15 | 3 | 40 | 18 | 12 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.3 | 0.41 | 0.1 | 0.1 | 0 | 0 | 24 | 5 | 9 |
| Chignik | 0.0 | 0.0 | 0.2 | 0.38 | 0.0 | 0.1 | 0 | 0 | 12 | 3 | 5 |
| Kodiak | 4.5 | 3.8 | 5.2 | 0.00 | 4.5 | 0.4 | 333 | 284 | 389 | 334 | 32 |
| Cook Inlet | 4.5 | 3.7 | 5.3 | 0.00 | 4.5 | 0.5 | 334 | 277 | 396 | 335 | 36 |
| Copper | 0.1 | 0.0 | 0.3 | 0.02 | 0.1 | 0.1 | 7 | 0 | 24 | 9 | 8 |
| Southeast Alaska/Northeast Gulf of Alaska | 4.9 | 4.0 | 6.0 | 0.00 | 5.0 | 0.6 | 368 | 294 | 450 | 370 | 48 |
| British Columbia | 51.6 | 49.5 | 53.6 | 0.00 | 51.6 | 1.2 | 3,840 | 3,688 | 3,992 | 3,840 | 92 |
| West Coast US | 33.9 | 32.1 | 35.8 | 0.00 | 33.9 | 1.1 | 2,526 | 2,388 | 2,666 | 2,526 | 85 |
| | | | | | | | | | Total | 7,447 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for KMA, 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.1 | 0.21 | 0.0 | 0.0 | 0 | 0 | 5 | 1 | 2 |
| Eastern Bering Sea | 0.7 | 0.4 | 1.1 | 0.00 | 0.7 | 0.2 | 47 | 28 | 74 | 48 | 14 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.1 | 0.27 | 0.0 | 0.0 | 0 | 0 | 8 | 2 | 3 |
| Chignik | 0.4 | 0.2 | 0.7 | 0.00 | 0.4 | 0.2 | 26 | 13 | 46 | 28 | 10 |
| Kodiak | 1.3 | 1.0 | 1.8 | 0.00 | 1.4 | 0.2 | 91 | 67 | 121 | 92 | 16 |
| Cook Inlet | 3.8 | 3.1 | 4.6 | 0.00 | 3.8 | 0.4 | 260 | 213 | 312 | 261 | 30 |
| Copper | 0.2 | 0.1 | 0.6 | 0.00 | 0.3 | 0.2 | 15 | 4 | 38 | 17 | 10 |
| Southeast Alaska/Northeast Gulf of Alaska | 6.2 | 5.2 | 7.4 | 0.00 | 6.3 | 0.7 | 424 | 354 | 500 | 425 | 44 |
| British Columbia | 56.6 | 54.7 | 58.4 | 0.00 | 56.6 | 1.1 | 3,842 | 3,713 | 3,969 | 3,842 | 78 |
| West Coast US | 30.6 | 28.9 | 32.2 | 0.00 | 30.6 | 1.0 | 2,075 | 1,963 | 2,190 | 2,076 | 69 |
| | | | | | | | | | Total | 6,791 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Kodiak Area Sport Fishery, April 16–August 29, 2014. Estimates include median, 90% credibility interval (CI), the probability that the group estimate is equal to zero ($P = 0$), mean, and SD.

| | Stock Composition | | | | | | Stock-specific Harvest | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.1 | 0.45 | 0.0 | 0.1 | 0 | 0 | 12 | 2 | 6 |
| Eastern Bering Sea | 0.0 | 0.0 | 0.5 | 0.37 | 0.1 | 0.2 | 0 | 0 | 38 | 7 | 16 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.2 | 0.44 | 0.0 | 0.1 | 0 | 0 | 15 | 3 | 8 |
| Chignik | 0.0 | 0.0 | 0.2 | 0.44 | 0.0 | 0.1 | 0 | 0 | 14 | 2 | 7 |
| Kodiak | 1.6 | 0.7 | 3.0 | 0.00 | 1.7 | 0.7 | 129 | 57 | 239 | 136 | 56 |
| Cook Inlet | 0.9 | 0.3 | 1.9 | 0.00 | 1.0 | 0.5 | 71 | 22 | 156 | 77 | 42 |
| Copper | 0.0 | 0.0 | 0.3 | 0.39 | 0.1 | 0.1 | 0 | 0 | 28 | 5 | 12 |
| Southeast Alaska/Northeast Gulf of Alaska | 6.8 | 4.2 | 9.7 | 0.00 | 6.9 | 1.7 | 550 | 341 | 782 | 554 | 135 |
| British Columbia | 46.1 | 41.4 | 51.0 | 0.00 | 46.2 | 2.9 | 3712 | 3330 | 4105 | 3715 | 236 |
| West Coast US | 44.1 | 39.6 | 48.6 | 0.00 | 44.1 | 2.7 | 3548 | 3188 | 3910 | 3548 | 220 |
| | | | | | | | | | Total | 8,049 | |

*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.–Annual estimates of stock composition (%) and stock-specific harvest for the Kodiak Area Sport Fishery, May 17–August 14, 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.91 | 0.0 | 0.1 | 0 | 0 | 0 | 1 | 5 |
| Eastern Bering Sea | 0.0 | 0.0 | 1.5 | 0.68 | 0.3 | 0.5 | 0 | 0 | 100 | 17 | 36 |
| North Alaska Peninsula | 0.0 | 0.0 | 1.0 | 0.74 | 0.1 | 0.4 | 0 | 0 | 65 | 10 | 25 |
| Chignik | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 3 |
| Kodiak | 5.0 | 3.0 | 7.6 | 0.00 | 5.1 | 1.4 | 334 | 203 | 507 | 341 | 93 |
| Cook Inlet | 1.7 | 0.6 | 3.5 | 0.00 | 1.8 | 0.9 | 114 | 42 | 232 | 122 | 59 |
| Copper | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.1 | 0 | 0 | 0 | 0 | 4 |
| Southeast Alaska/Northeast Gulf of Alaska | 10.6 | 6.6 | 15.1 | 0.00 | 10.6 | 2.6 | 708 | 442 | 1011 | 714 | 173 |
| British Columbia | 36.6 | 31.0 | 42.6 | 0.00 | 36.7 | 3.5 | 2457 | 2078 | 2856 | 2461 | 237 |
| West Coast US | 45.3 | 40.1 | 50.6 | 0.00 | 45.4 | 3.2 | 3042 | 2690 | 3397 | 3043 | 214 |
| | | | | | | | | | Total | 6,709 | |

*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 estimates of stock composition (%) for the Kodiak Area Sport Fishery, May 22–August 13, 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). Note that harvest estimates were not available for the Kodiak Regulatory Area sport fishery in 2016.

| | Stock Composition | | | | | |
|---|---|---|---|---|---|---|
| | | 90% CI | | | | |
| Reporting Group | Median | 5% | 95% | $P = 0$ | Mean | SD |
| Russia | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 |
| Eastern Bering Sea | 0.5 | 0.0 | 1.6 | 0.25 | 0.6 | 0.5 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 |
| Chignik | 0.0 | 0.0 | 0.0 | 0.92 | 0.0 | 0.0 |
| Kodiak | 3.9 | 2.5 | 5.7 | 0.00 | 4.0 | 1.0 |
| Cook Inlet | 0.0 | 0.0 | 1.4 | 0.62 | 0.3 | 0.5 |
| Copper | 0.0 | 0.0 | 0.0 | 0.90 | 0.0 | 0.1 |
| Southeast Alaska/Northeast Gulf of Alaska | 11.8 | 8.3 | 15.6 | 0.00 | 11.9 | 2.2 |
| British Columbia | 46.3 | 41.3 | 51.4 | 0.00 | 46.3 | 3.1 |
| West Coast US | 36.9 | 32.8 | 41.2 | 0.00 | 36.9 | 2.5 |

*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.

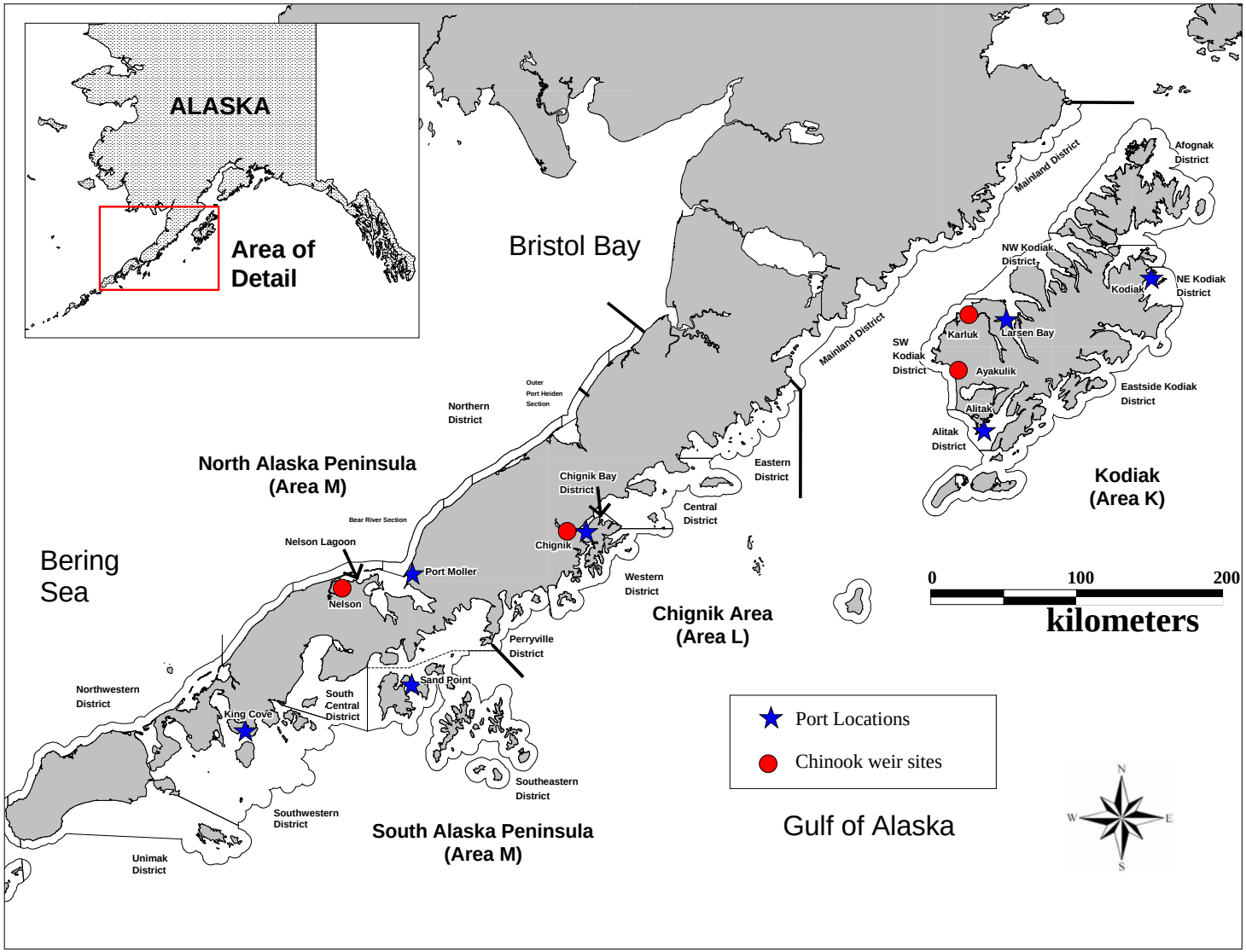


Figure 1.–Map depicting the Westward Region and commercial salmon fishery districts of Kodiak, Chignik, and Alaska Peninsula management areas.

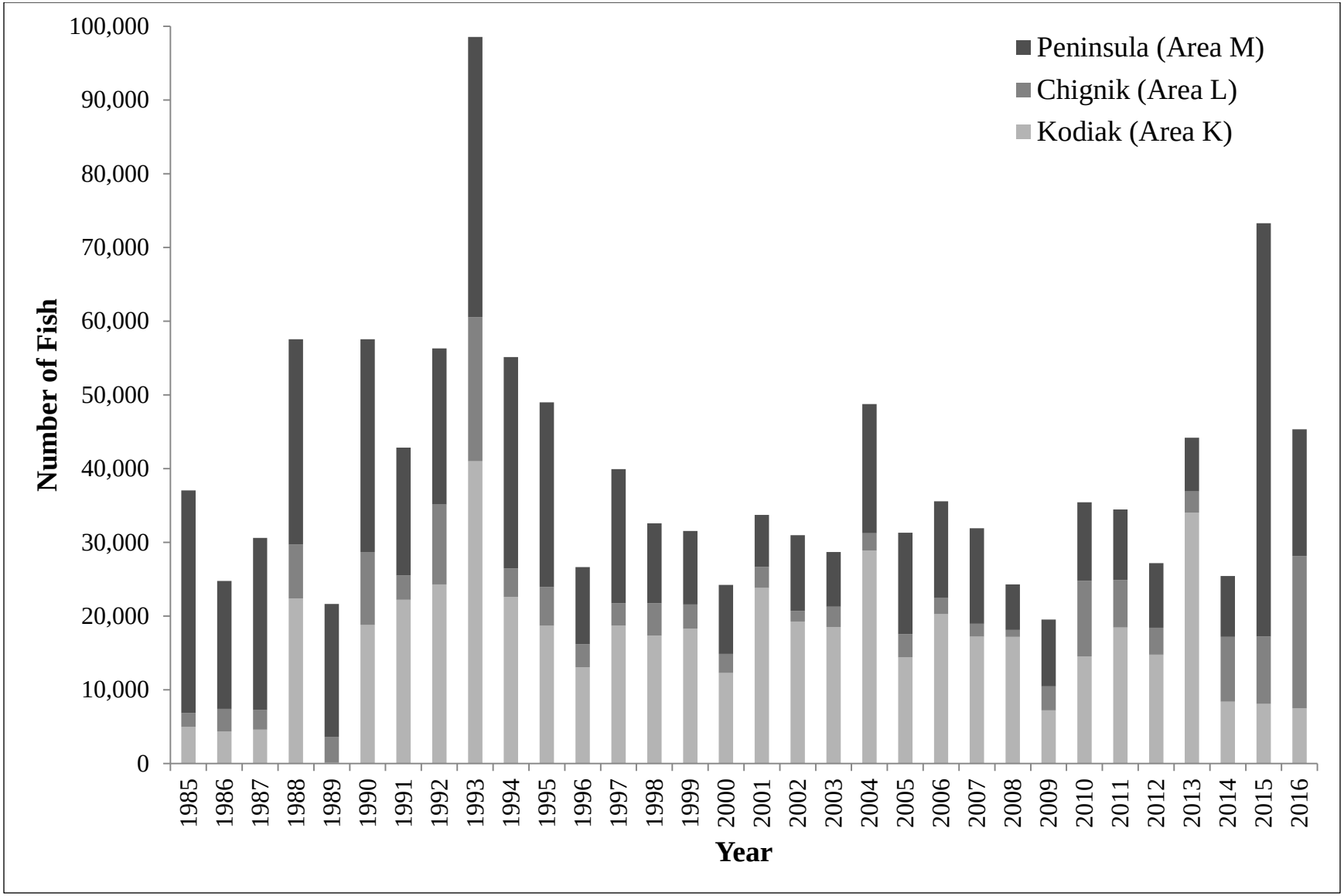


Figure 2.–Westward Region Chinook salmon harvest in commercial fisheries by management area by year, 1958–2016.

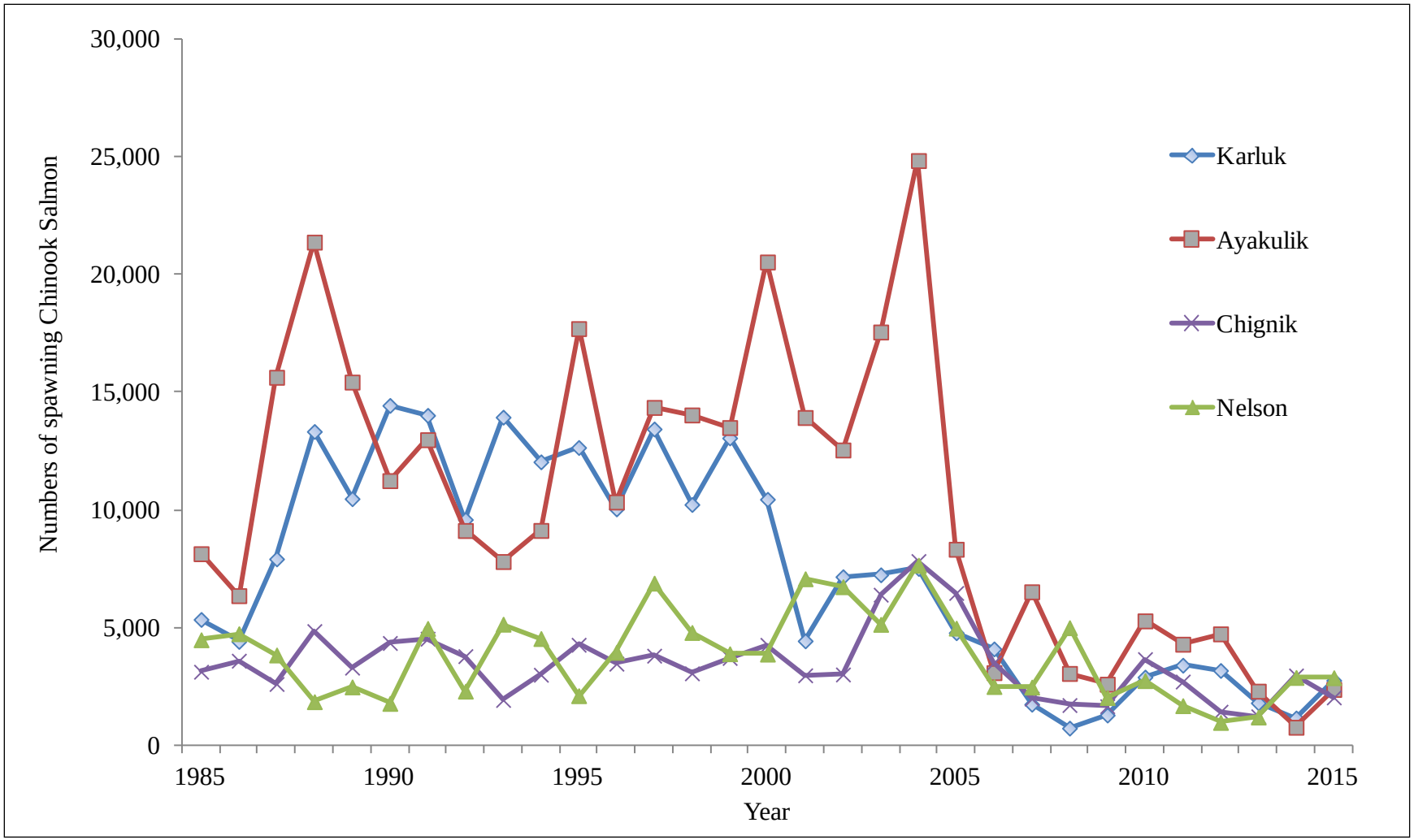


Figure 3.–Westward Region Chinook salmon escapement estimates at the major systems monitored via weir, 1985–2015.

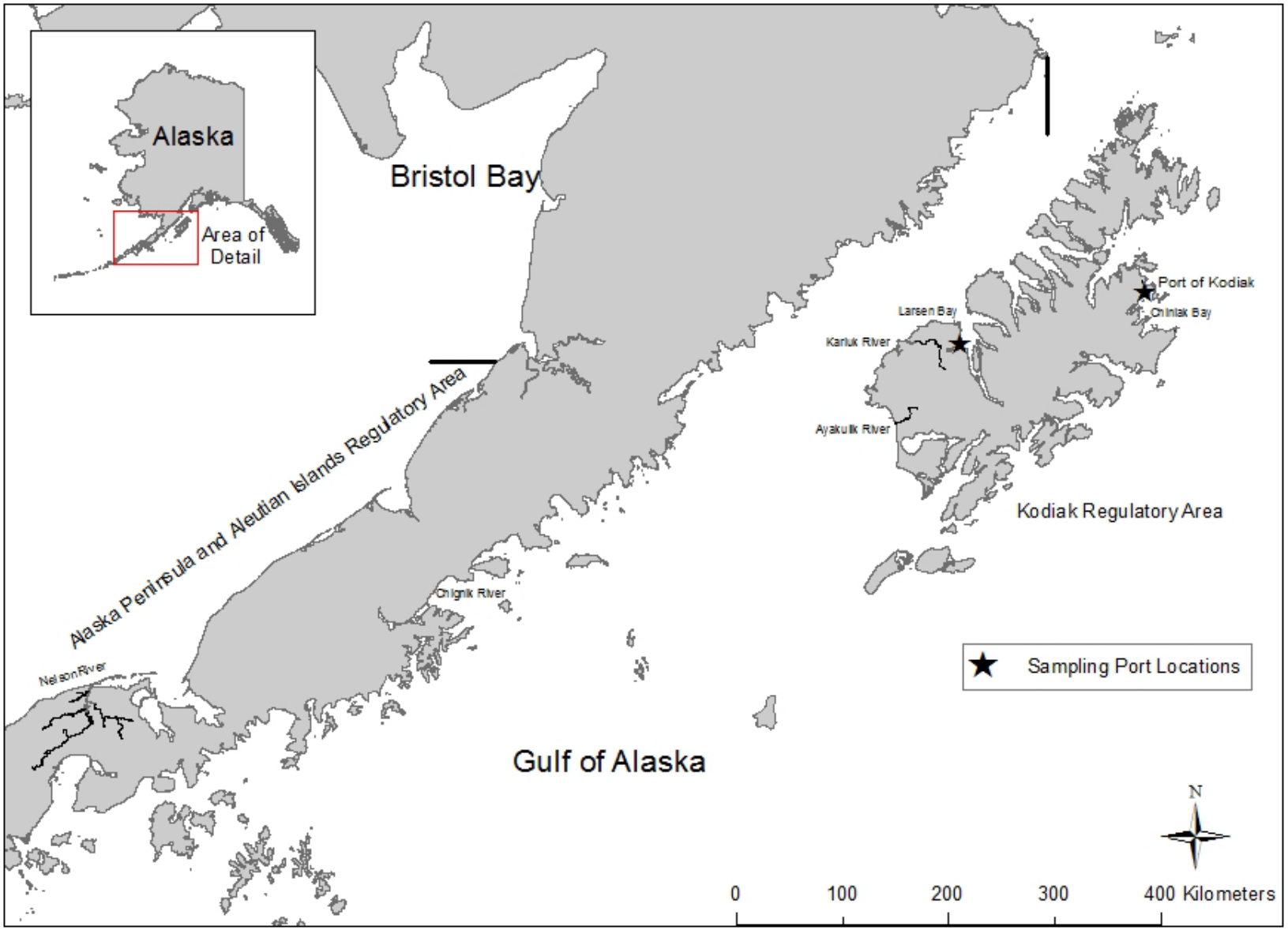


Figure 4.–Map depicting the sport fish regulatory areas for Kodiak and the Alaska Peninsula.

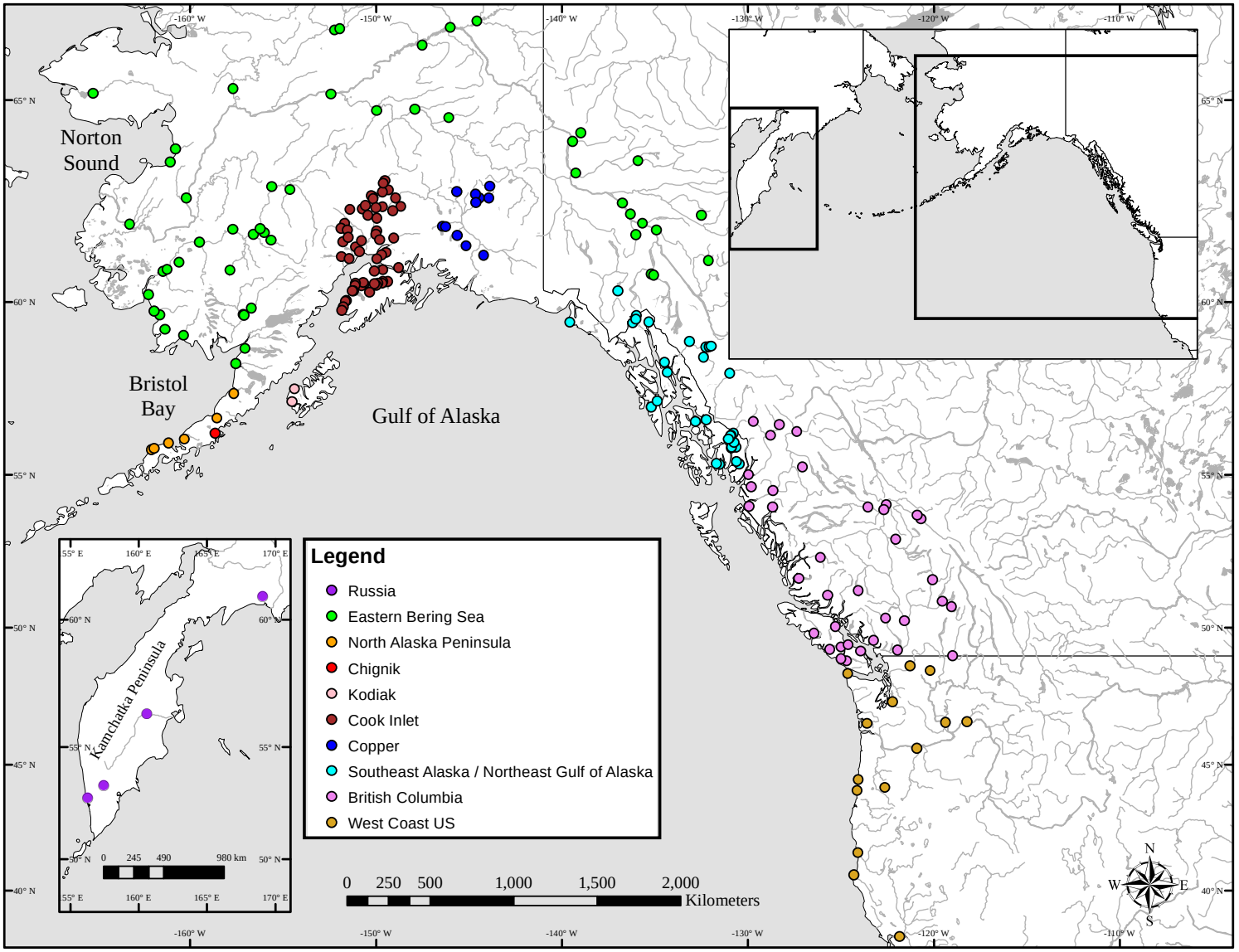


Figure 5.–The location and reporting group affiliation of 211 populations of Chinook salmon included in the coastwide genetic baseline for genetic mixed stock analysis of commercial and sport harvest of Chinook salmon in Westward Region, 2014–2016.

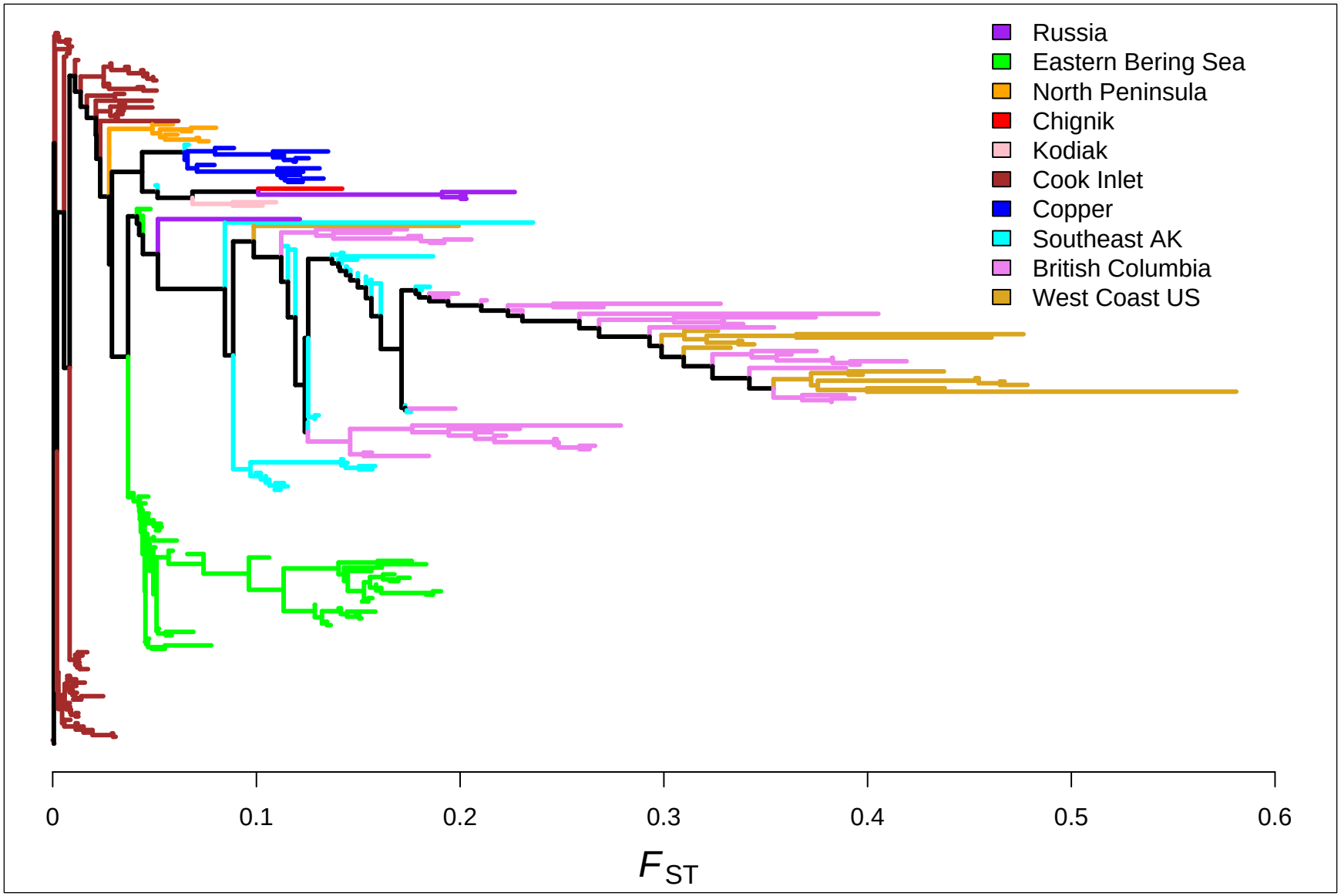


Figure 6.–Broad-scale view of a consensus Neighbor-Joining tree based upon pairwise $F_{ST}$ among 211 populations of Chinook salmon included in the coastwide Chinook salmon baseline. Tree branch colors denote reporting group affiliation of populations.

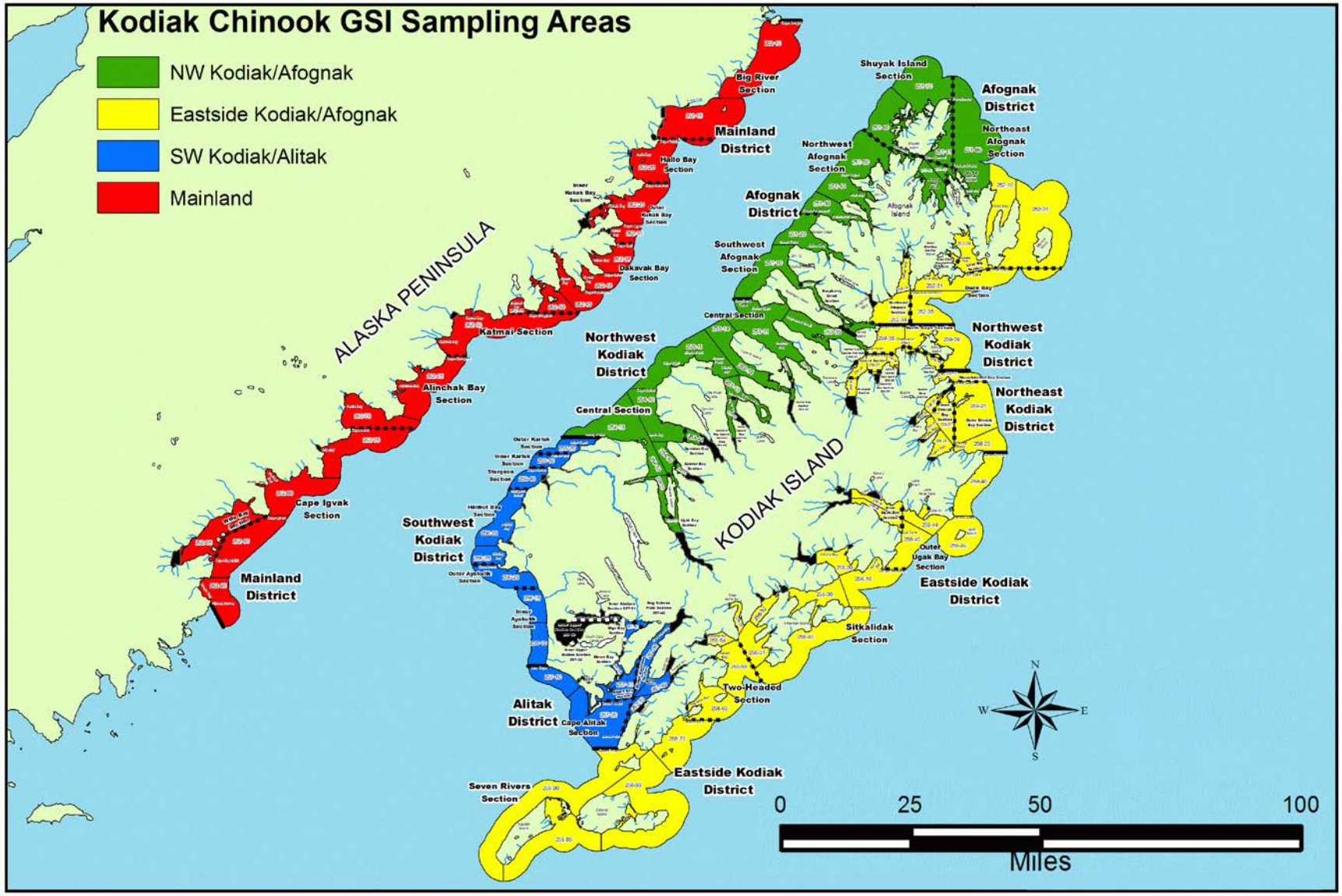


Figure 7.–Map depicting the 4 geographic regions in KMA where Chinook salmon were sampled from commercial salmon fisheries for genetic mixed stock analysis.

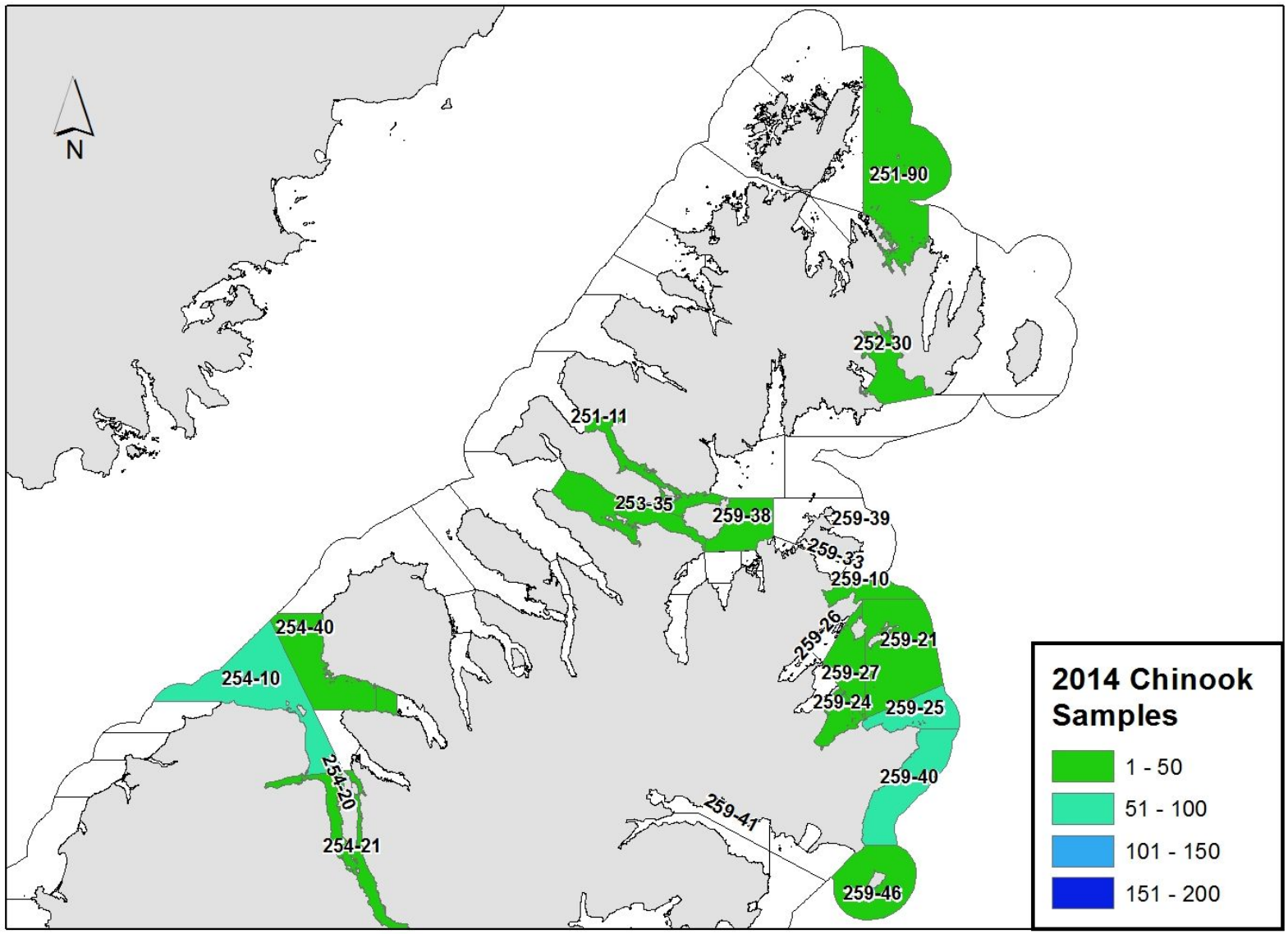


Figure 8.–Map depicting the number of samples collected in the Kodiak Regulatory Area marine sport fishery by statistical area, 2014.

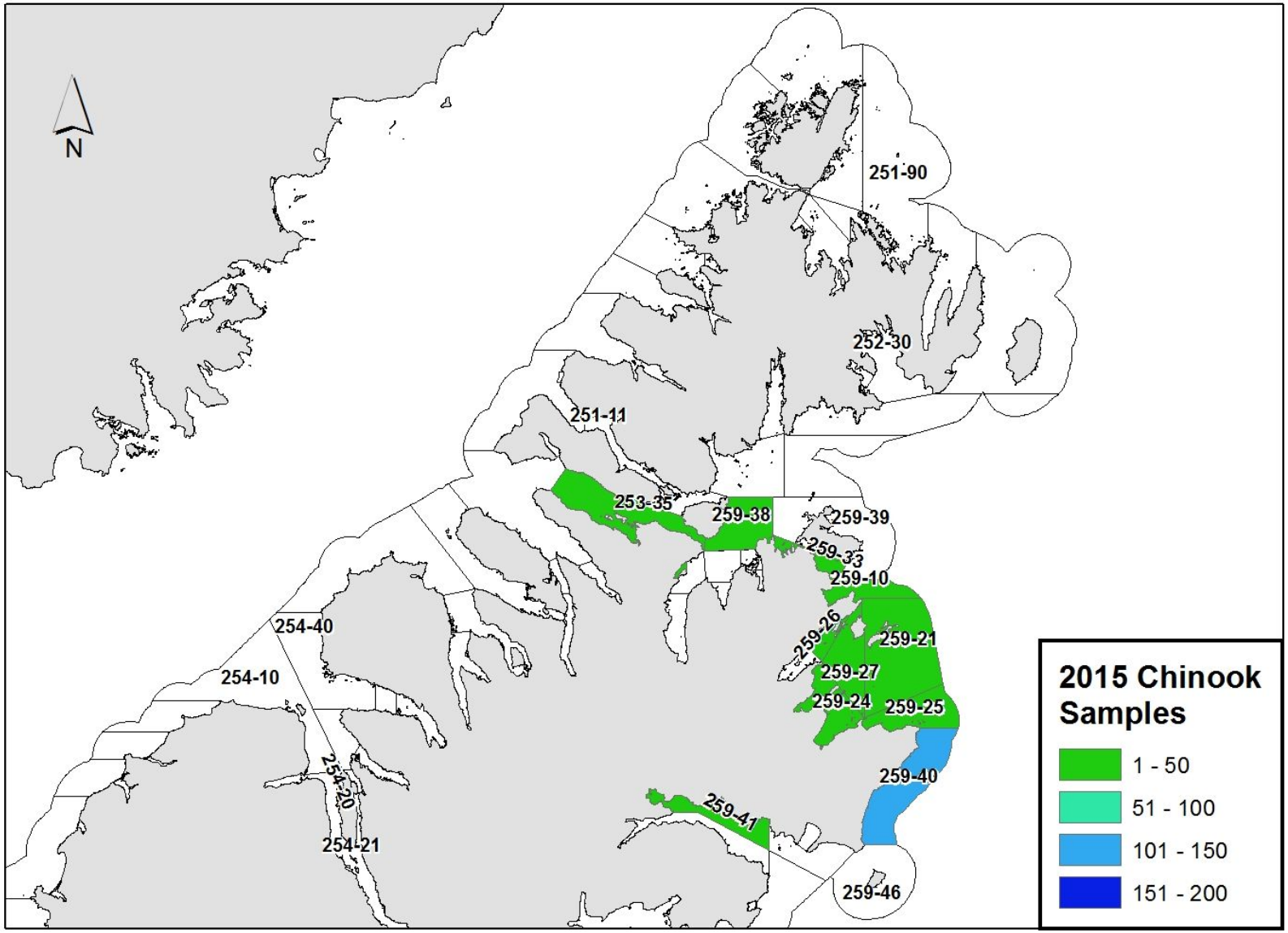


Figure 9.–Map depicting the number of samples collected in the Kodiak Regulatory Area marine sport fishery by statistical area, 2015.

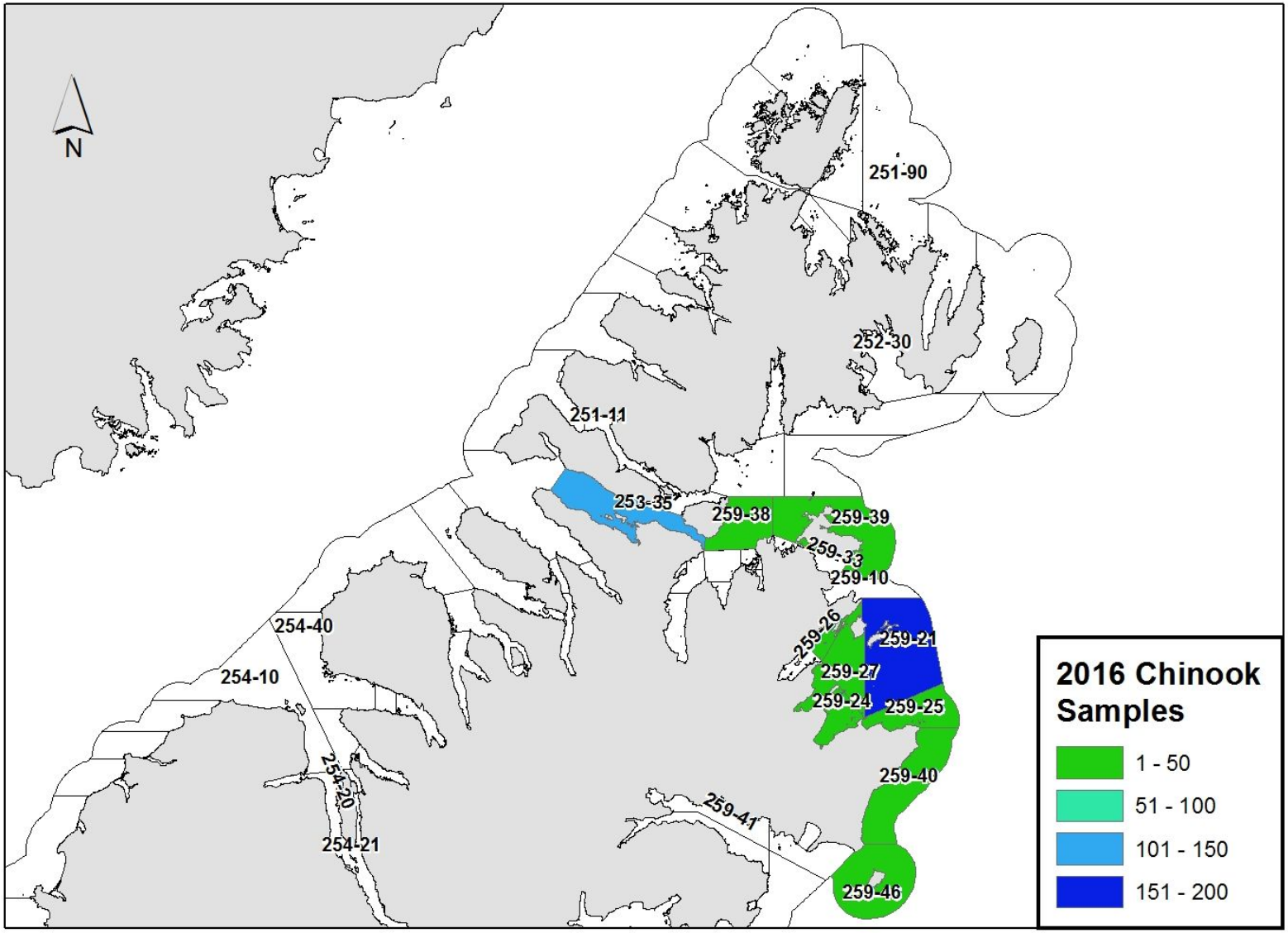


Figure 10.–Map depicting the number of samples collected in the Kodiak Regulatory Area marine sport fishery by statistical area, 2016.

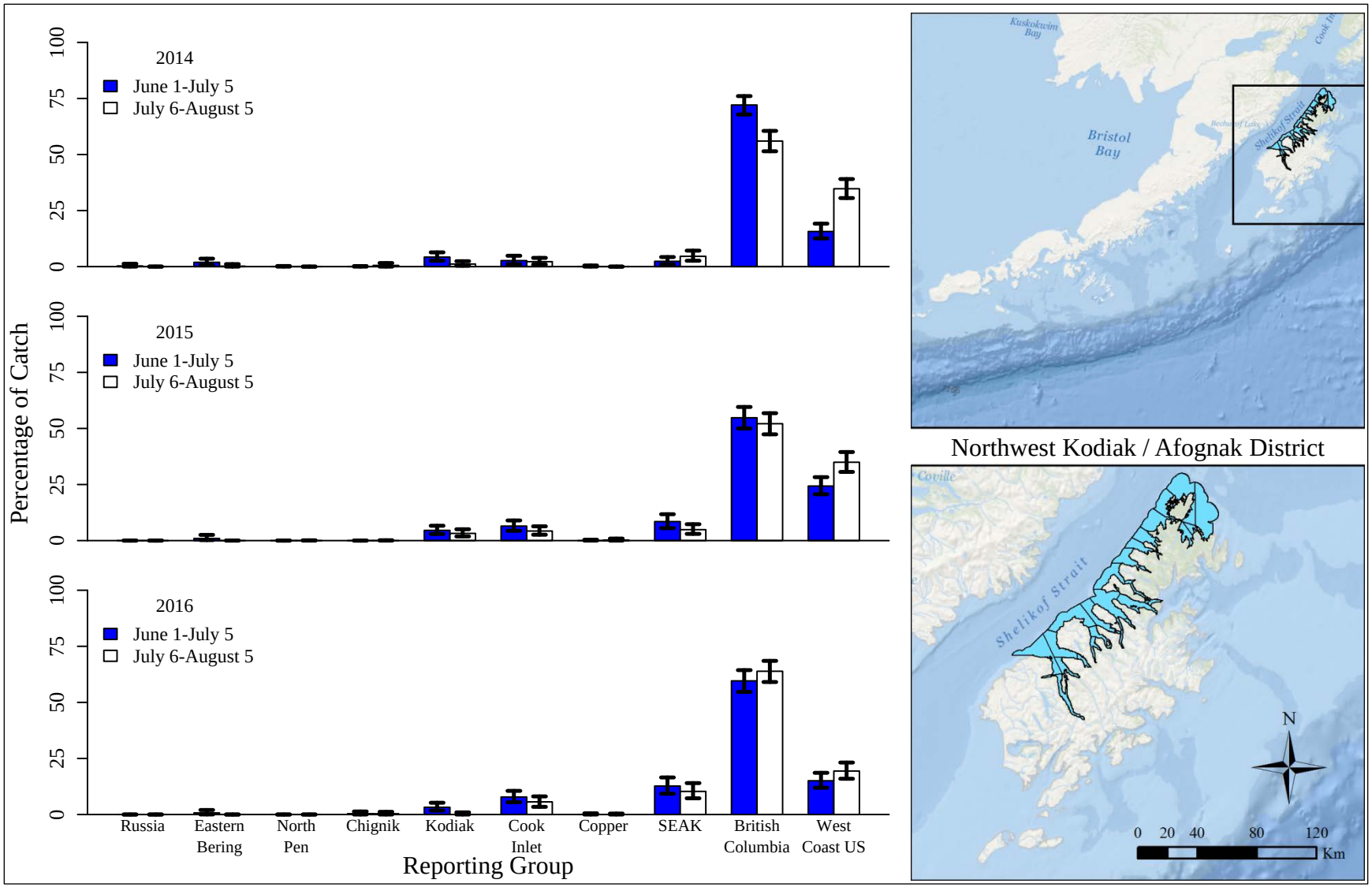


Figure 11.–Stock composition estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the Northwest Kodiak/Afognak districts, Kodiak Management Area, Alaska, 2014–2016.

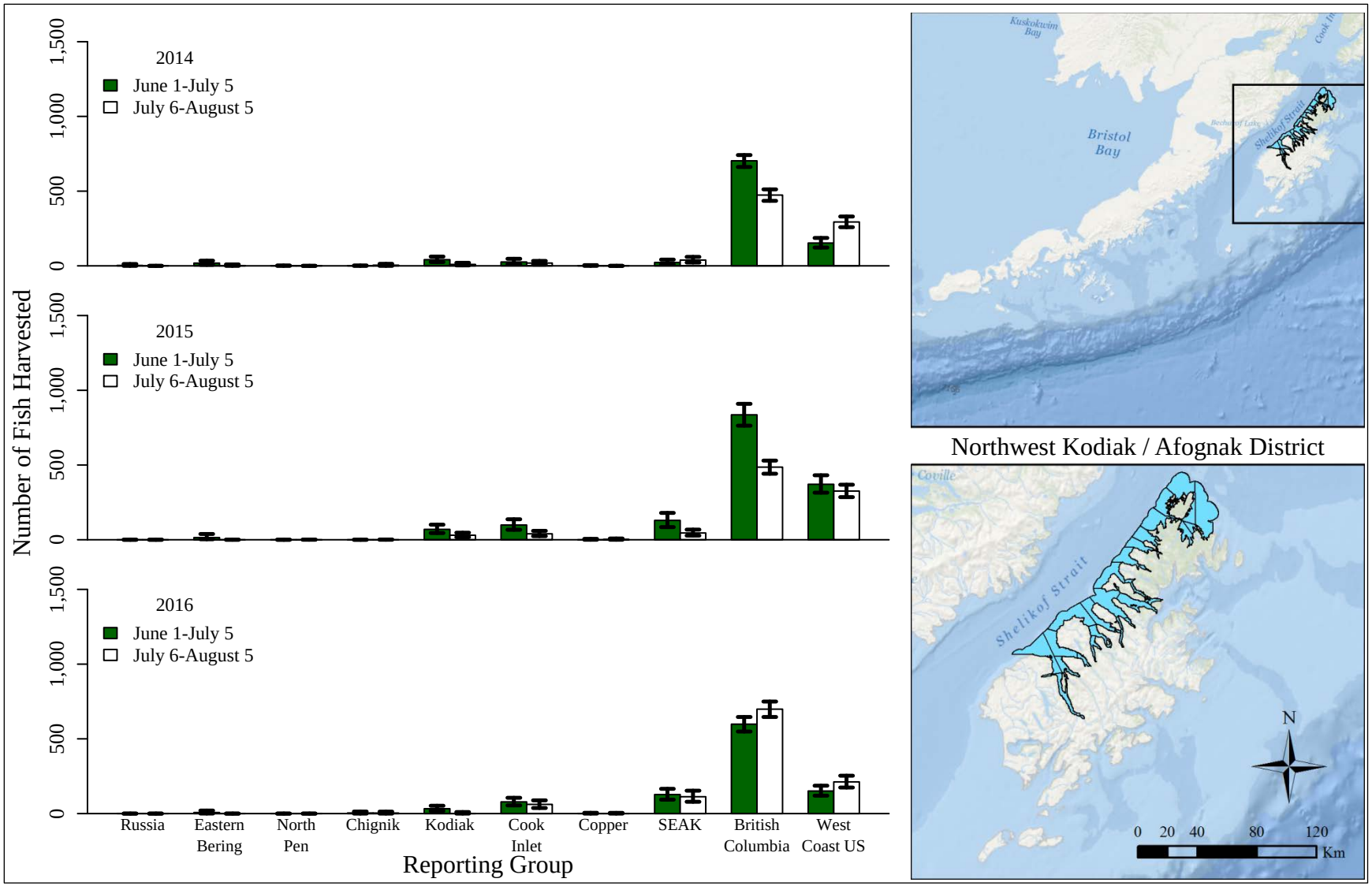


Figure 12.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the Northwest Kodiak/Afognak districts, Kodiak Management Area, Alaska, 2014–2016.

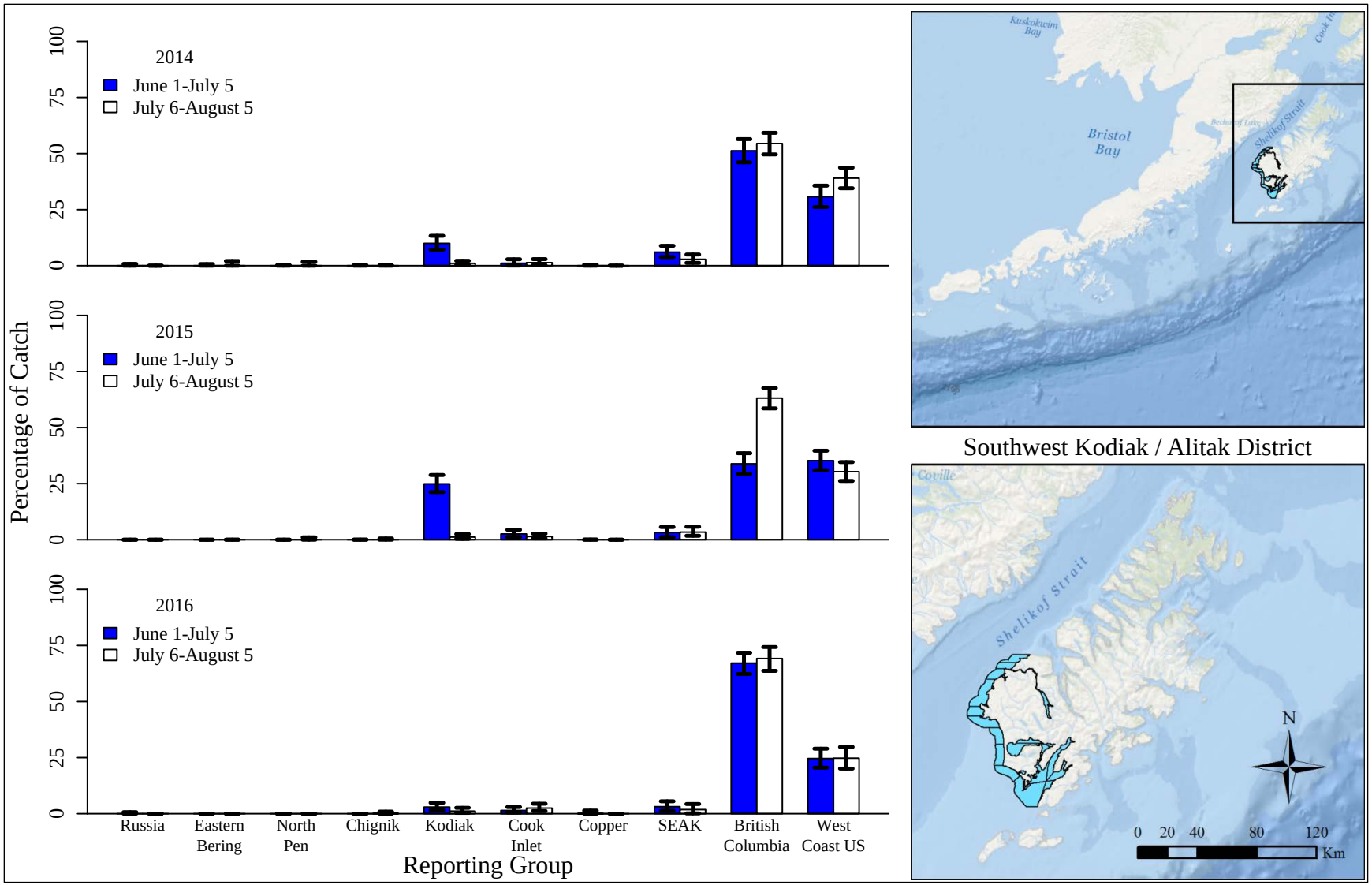


Figure 13.–Stock composition estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the Southwest Kodiak/Alitak districts, Kodiak Management Area, Alaska, 2014–2016.

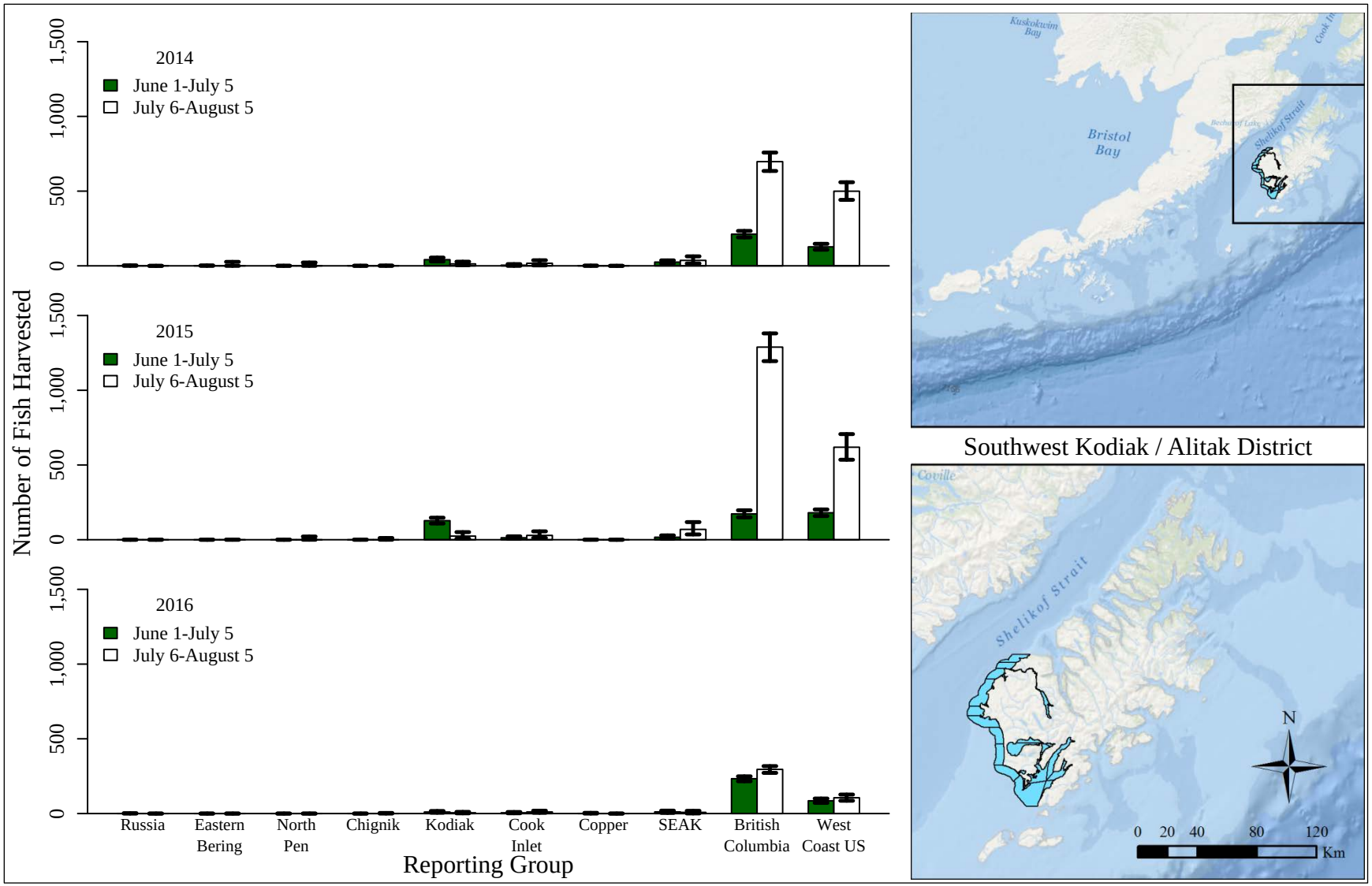


Figure 14.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the Southwest Kodiak/Alitak districts, Kodiak Management Area, Alaska, 2014–2016.

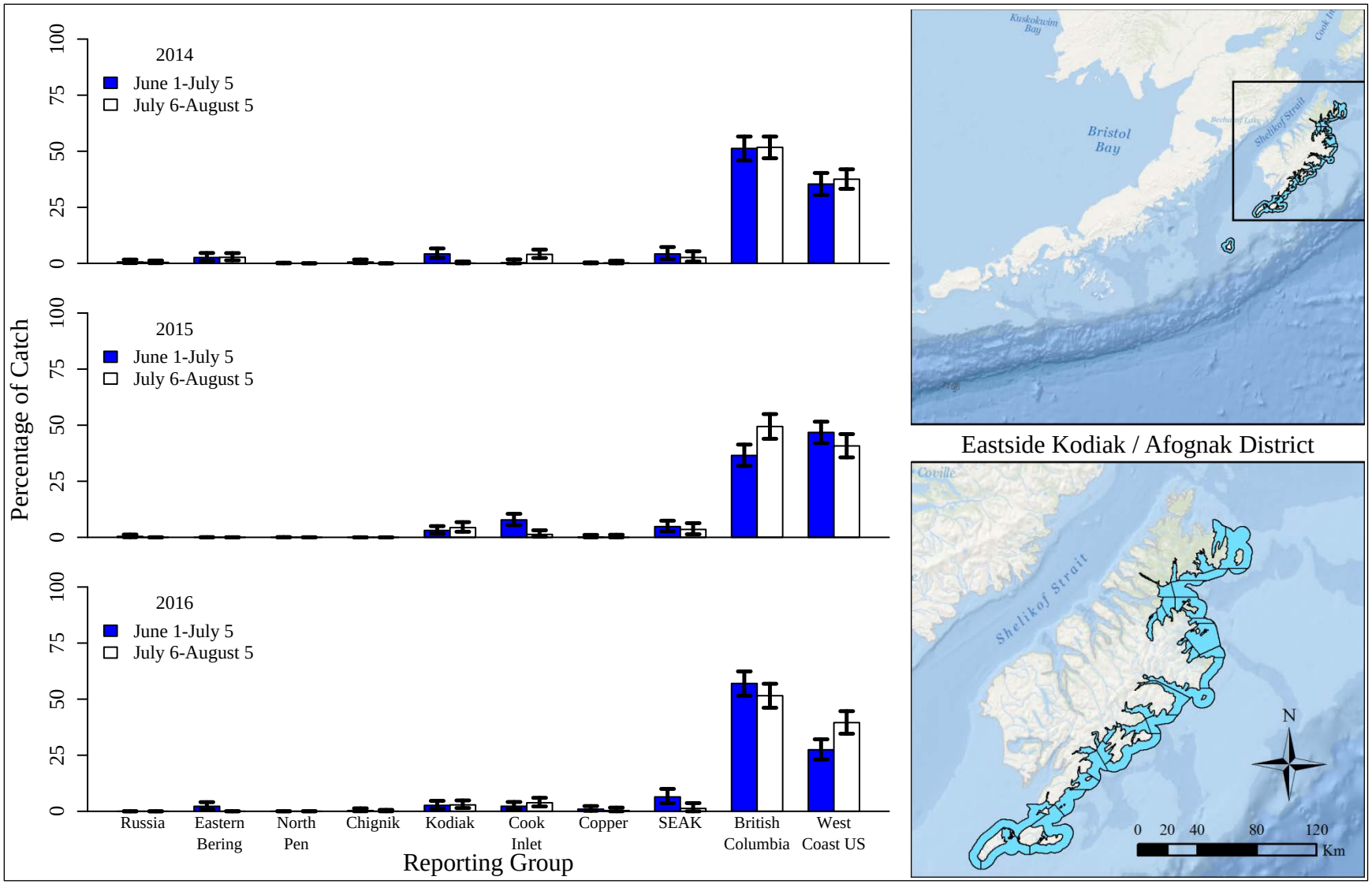


Figure 15.–Stock composition estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the Eastside Kodiak/Afognak districts, Kodiak Management Area, Alaska, 2014–2016.

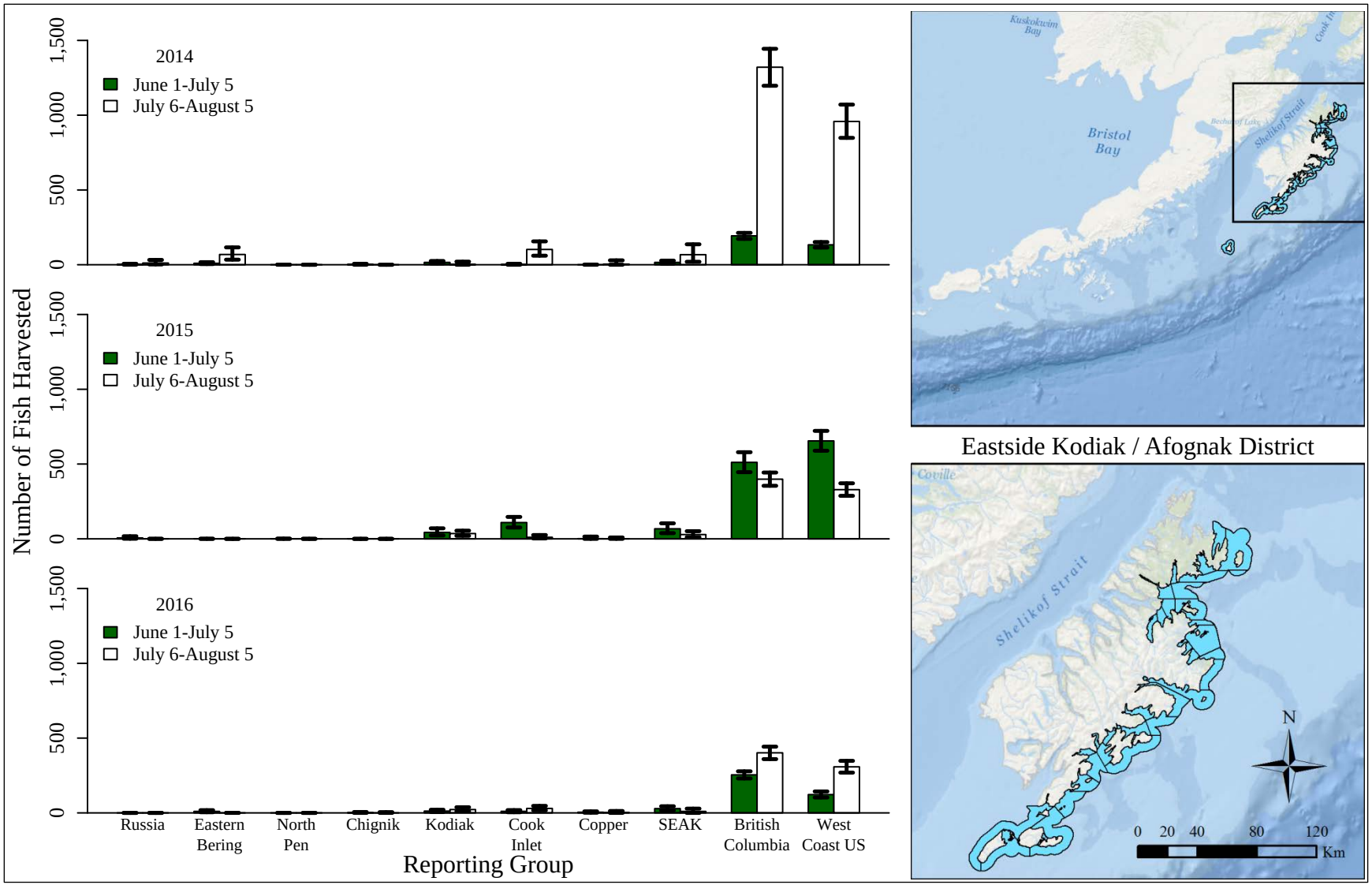


Figure 16.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the Eastside Kodiak/Afognak districts, Kodiak Management Area, Alaska, 2014–2016.

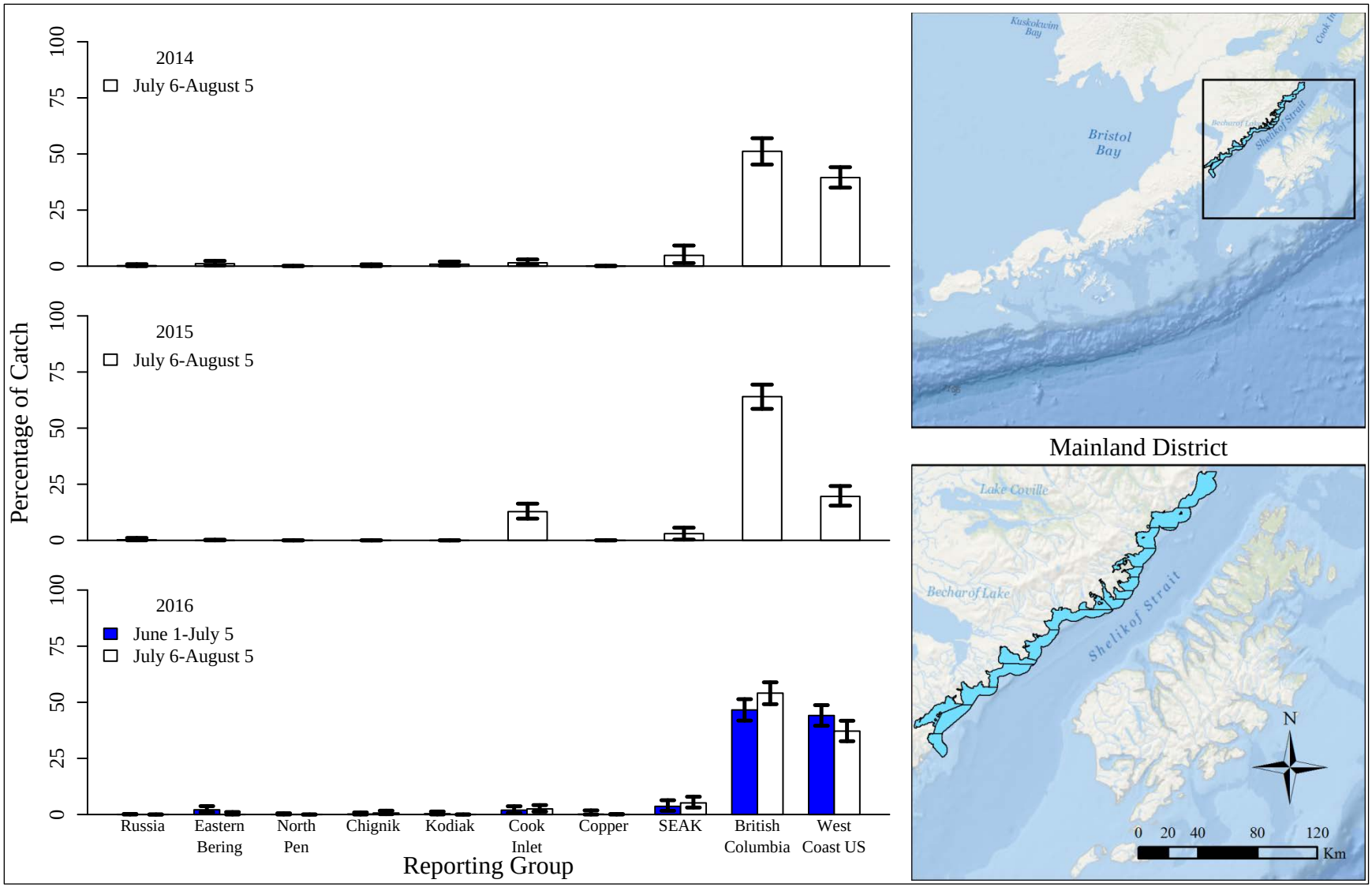


Figure 17.–Stock composition estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the Mainland District, Kodiak Management Area, Alaska, 2014–2016.

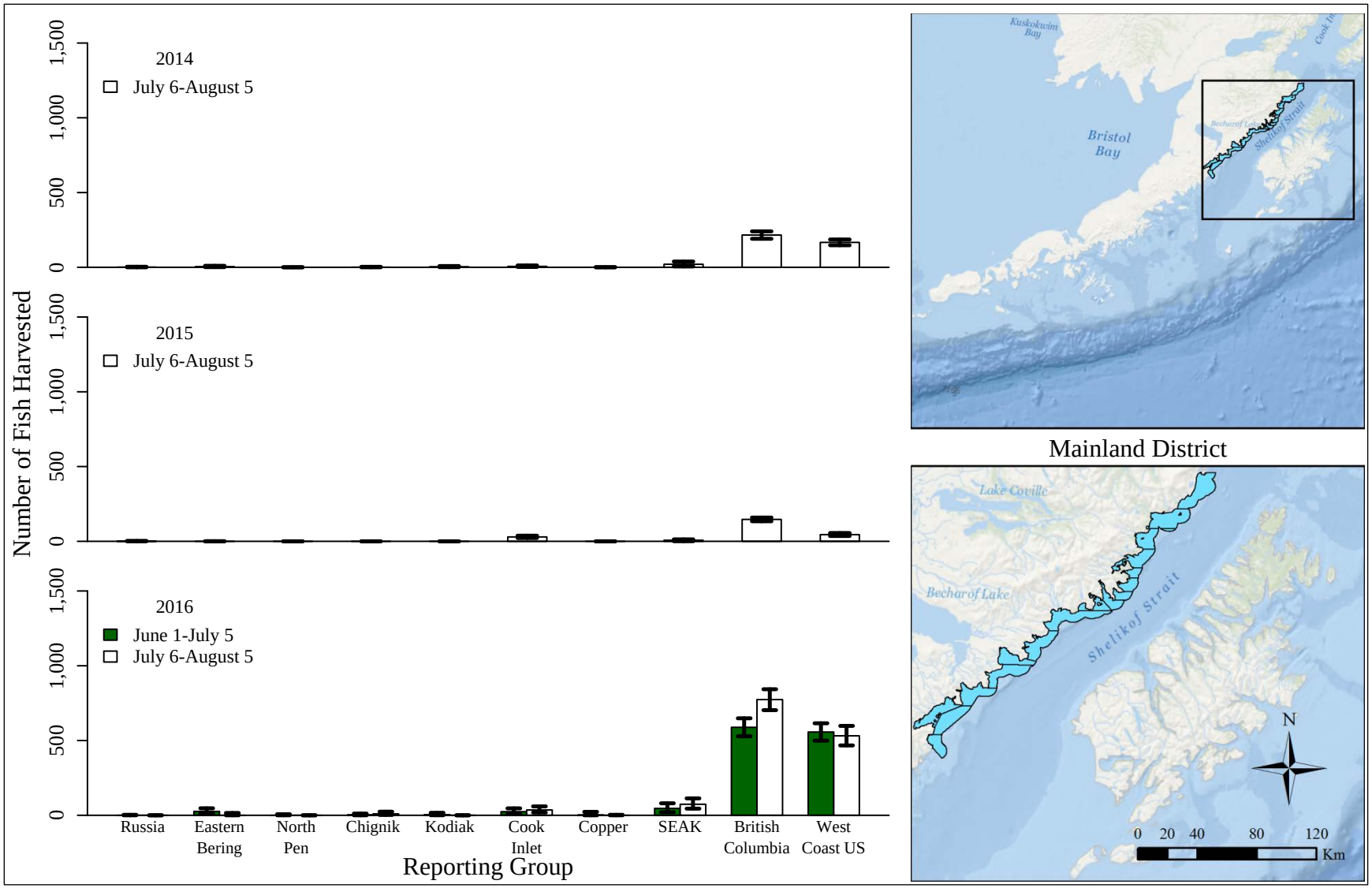


Figure 18.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the Mainland District, Kodiak Management Area, Alaska, 2014–2016.

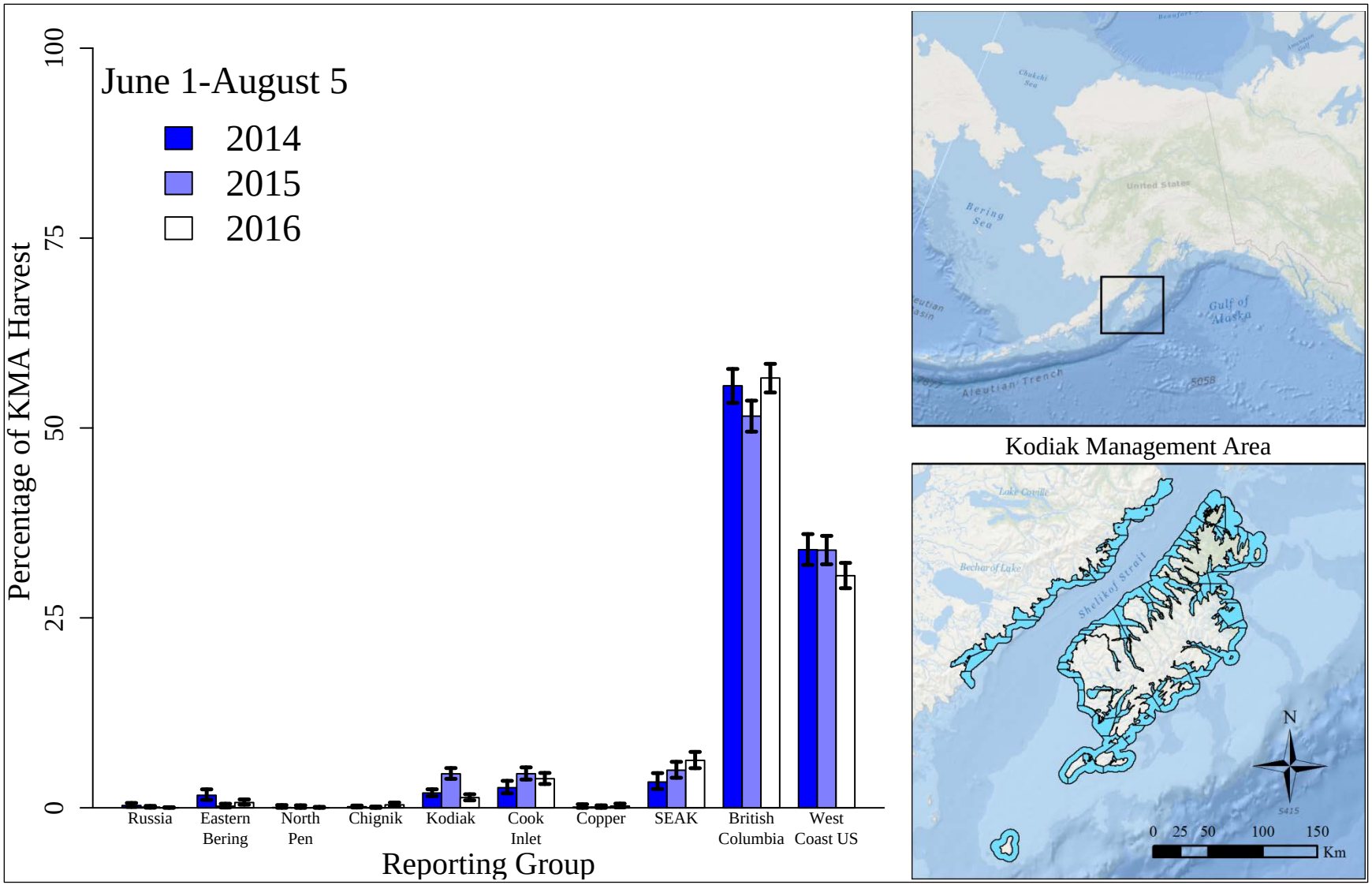


Figure 19.–Stock composition estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the Kodiak Management Area, Alaska, 2014–2016.

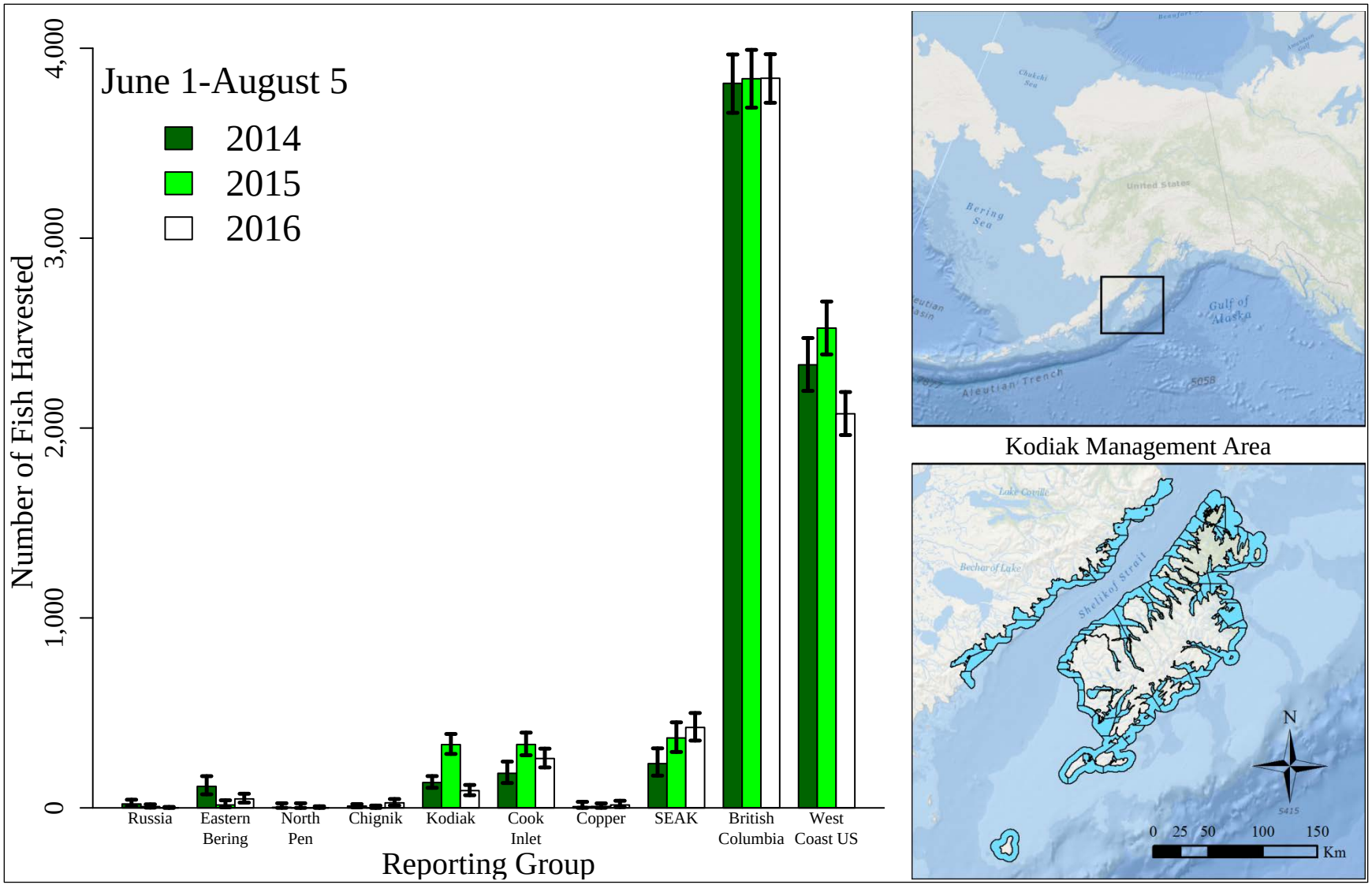


Figure 20.–Stock-specific harvest estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the Kodiak Management Area, Alaska, 2014–2016.

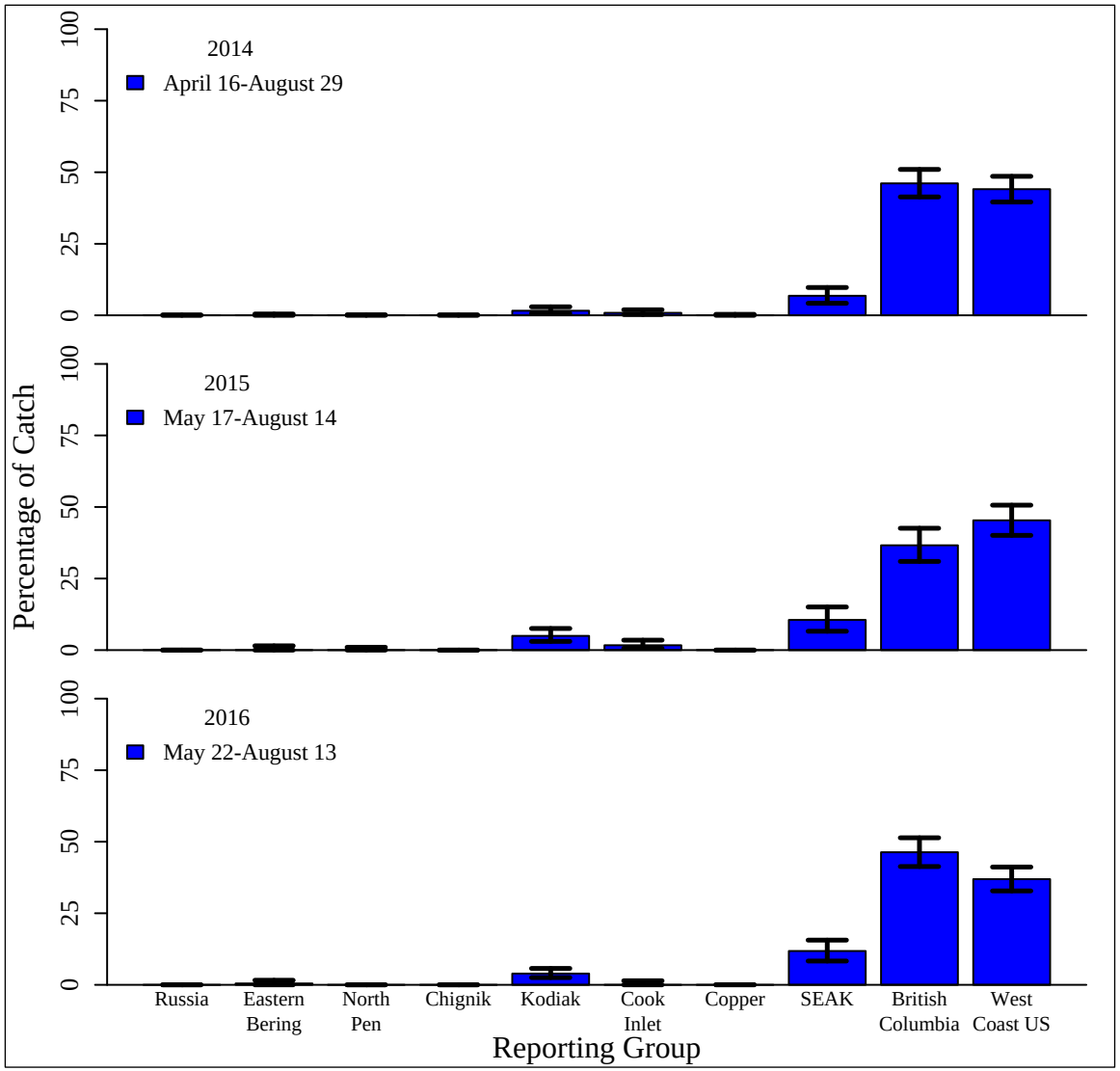


Figure 21.–Stock composition estimates (medians) and 90% credibility intervals of samples of Chinook salmon sport harvest sampled from Kodiak Harbor and Larsen Bay (2014 only), Kodiak Management Area, Alaska, 2014–2016.

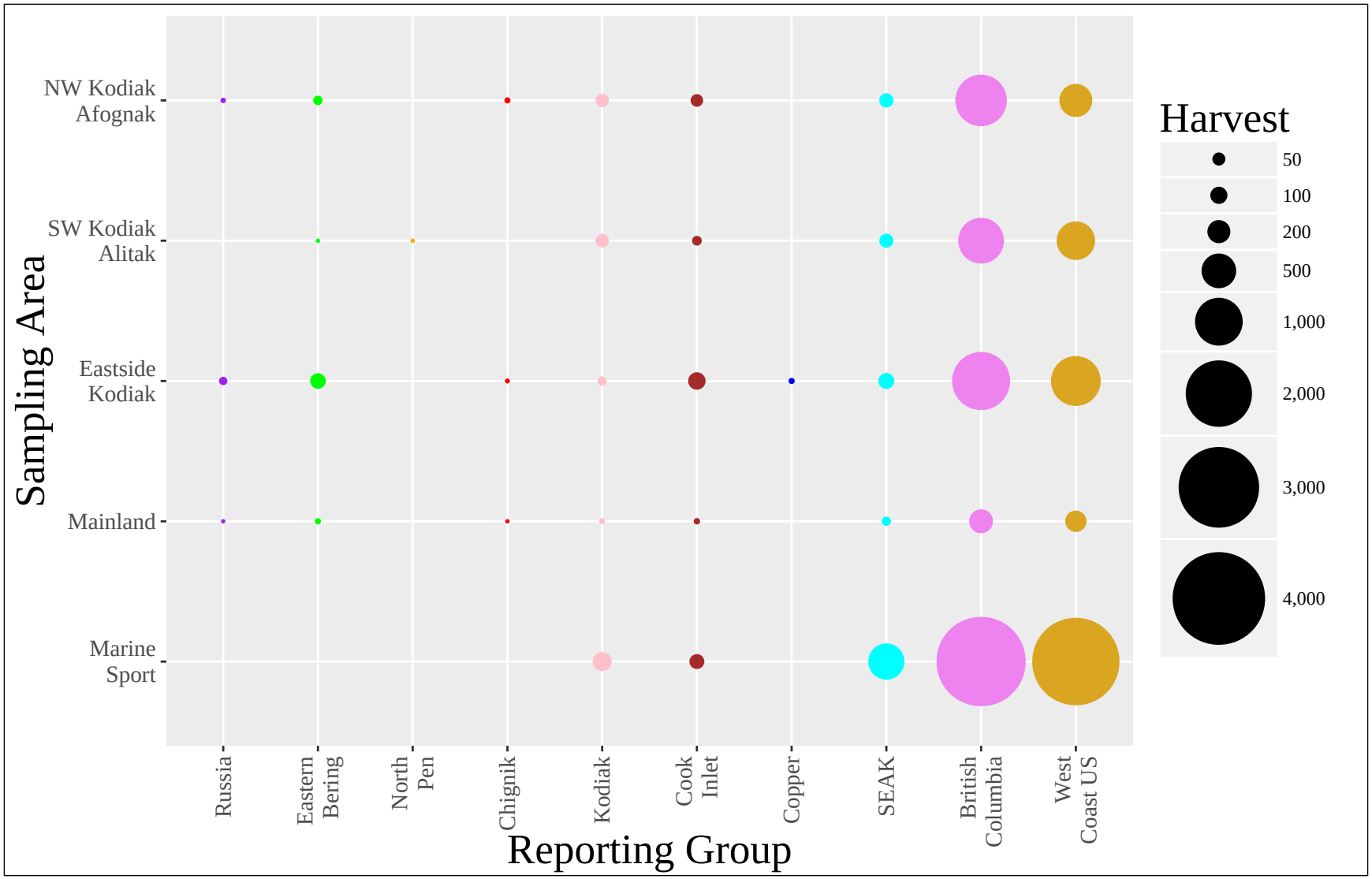


Figure 22.–Annual stock-specific harvest estimates (medians) of Chinook salmon from spatial areas sampled in Kodiak Management Area commercial harvest and Kodiak Regulatory Area marine sport harvest, 2014.

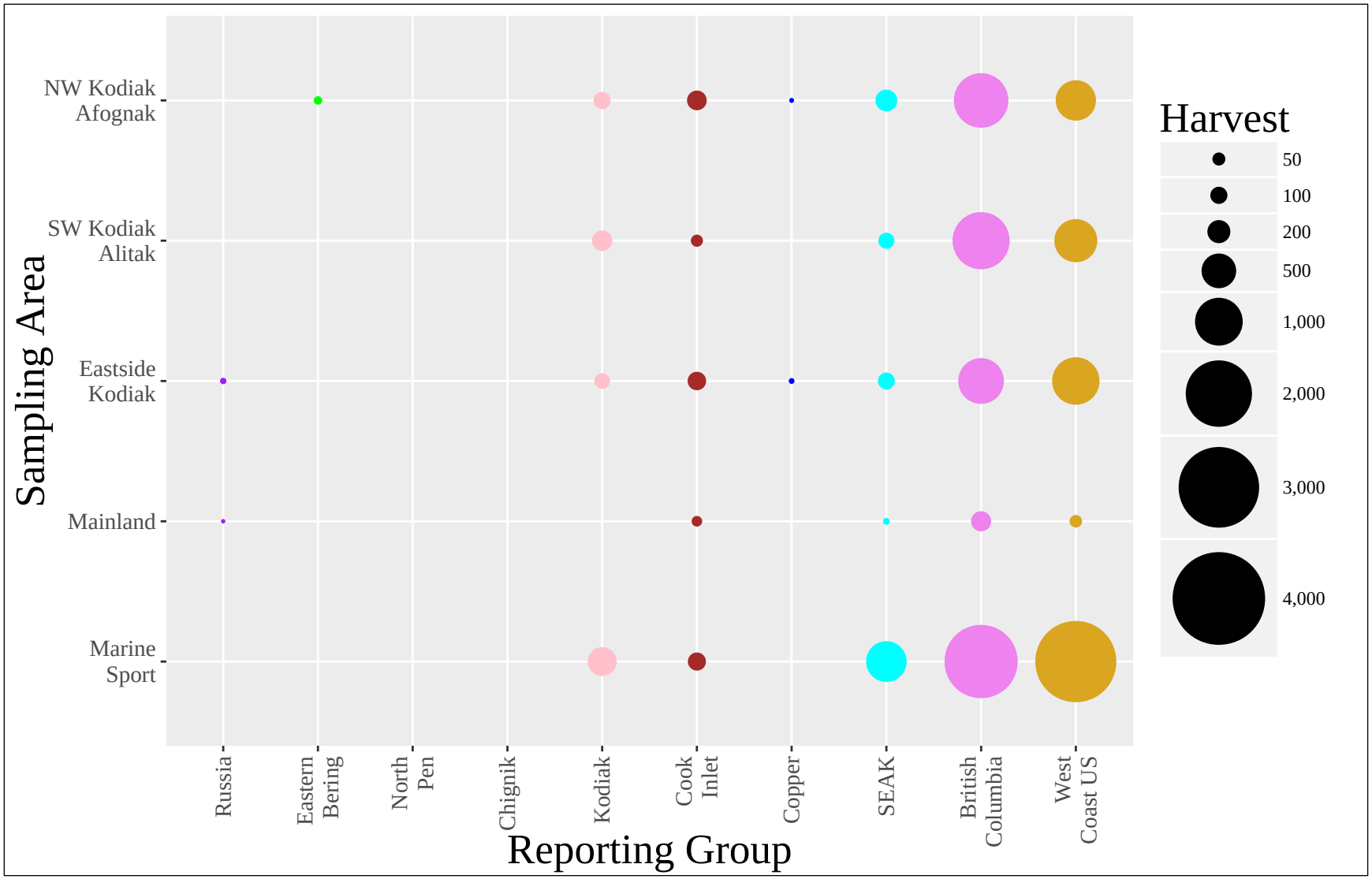


Figure 23.–Annual stock-specific harvest estimates (medians) of Chinook salmon from spatial areas sampled in Kodiak Management Area commercial harvest and Kodiak Regulatory Area marine sport harvest, 2015.

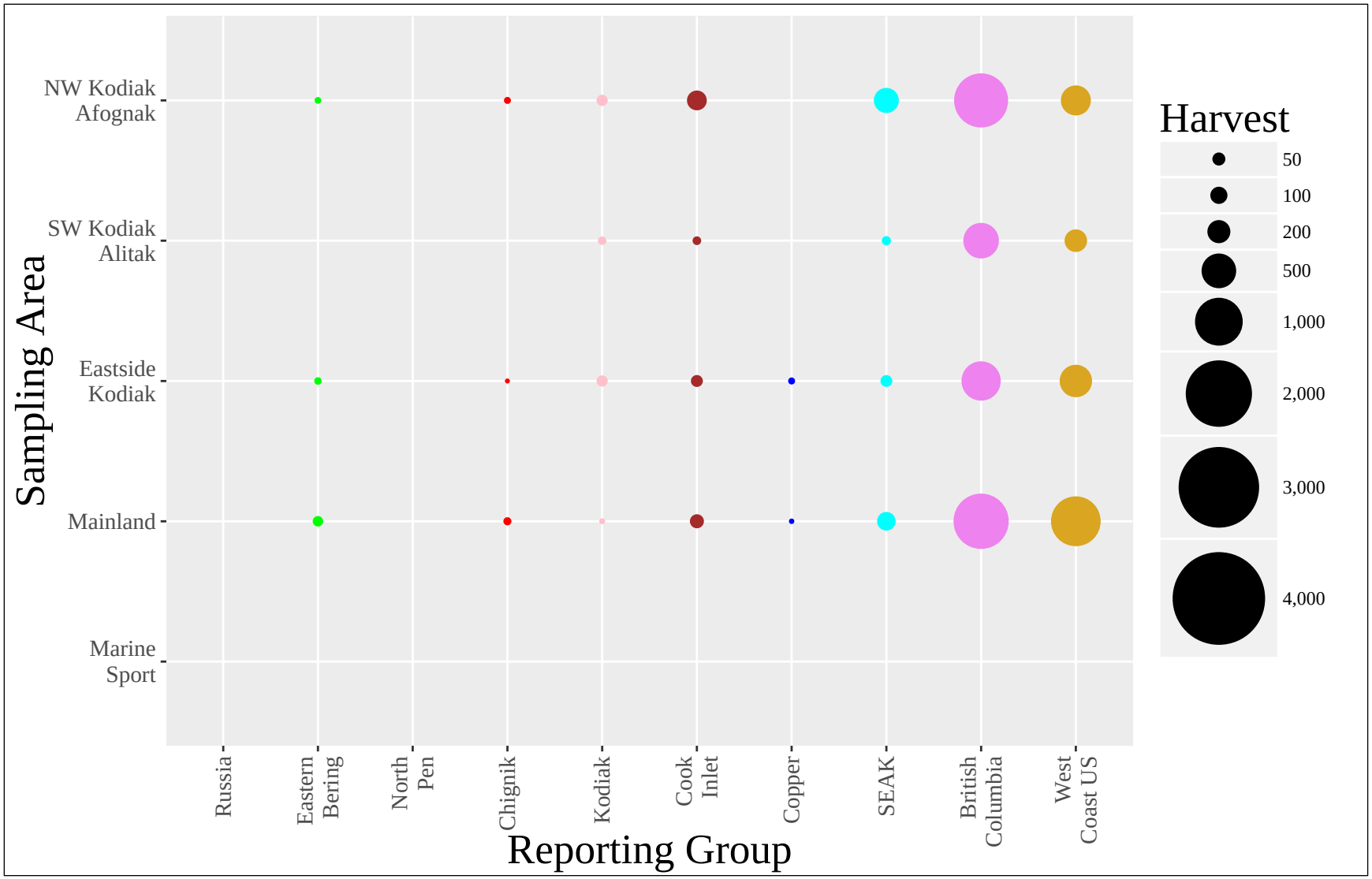


Figure 24.–Annual stock-specific harvest estimates (medians) of Chinook salmon from spatial areas sampled in Kodiak Management Area commercial harvest and Kodiak Regulatory Area marine sport harvest, 2016. Harvest estimates were not available for the Kodiak Regulatory Area sport fishery in 2016.

# APPENDIX A: WESTWARD REGION CHINOOK SALMON RESEARCH INITIATIVE SAMPLING RESULTS, 2014

Appendix A1.–Westward Region Chinook salmon genetic samples from commercial harvest as part of the Chinook Salmon Research Initiative, 2014.

| | | | | | Strata | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | (1)Early | | (2)Late | |
| Area | District(s) | Statistical Areas | Sampling Site | Gear Type | Harvest | Samples | Harvest | Samples |
| Kodiak | NW Kodiak/Afognak | 251,253,254 | Larsen Bay | Seine/Gillnet | 975 | 657 | 846 | 406 |
| | SW Kodiak/Alitak | 255,256,257 | Alitak | Seine | 414 | 287 | 1,280 | 426 |
| | Eastside Kodiak/Afognak | 258,259,252 | Kodiak | Seine | 377 | 294 | 2,553 | 505 |
| | Mainland | 262 | Kodiak | Seine | 0 | - | 422 | 475 |
| Chignik | Chignik Bay | 271 | Chignik | Seine | 0 | - | 239 | 84 |
| | Eastern/Central/Western/Perryville | 272,273,275 | Chignik | Seine | 0 | - | 5,684[a] | 553[a] |
| South Pen. | Southeastern/South Central | 282,283 | Sand Point | Seine/Gillnet | 1,287[a] | 324[a] | 4,236[a] | 386[a] |
| | Unimak/Southwestern | 284,285 | King Cove | Seine/Gillnet | 1,002[a] | 405[a] | 601 | 0 |
| North Pen. | Northern District | 314,315,316,317 | Port Moller | Gillnet | 167 | 52 | 237 | 73 |
| | Nelson Lagoon | 313-30 | Port Moller | Gillnet | 432 | 182 | 19 | 0 |
| | Total | | | Total | 4,654 | 2,201 | 16,117 | 2,908 |

[a] Samples from strata were analyzed as a single, stratified mixture to estimate stock composition of Chinook salmon harvest in Chignik (excluding Chignik Bay) and the South Alaska Peninsula (Appendix B).

# APPENDIX B: STOCK COMPOSITION AND STOCK-SPECIFIC HARVEST ESTIMATES OF CHINOOK SALMON COMMERCIAL HARVEST IN SOUTH PENINSULA AND CHIGNIK MANAGEMENT AREAS, 2014

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# INTRODUCTION

Sampling of Chinook salmon (*Oncorhynchus tshawytscha*) in the commercial salmon fisheries of the Westward Region did not happen as originally planned under the Chinook Salmon Research Initiative (ADF&G Chinook Salmon Research Team 2013; Foster and Dann 2014). Sampling was planned over 3 years (2014–2016) in the ports of Kodiak, Larsen Bay, and Alitak in KMA (Area K), Chignik in the CMA (Area L), and Sand Point, King Cove, and Port Moller in the Alaska Peninsula Management Area (Area M). In the first year of the project, 2014, a total of 2,201 fish were sampled successfully for age, sex, and length information and genetic tissue during the early strata, and a total of 2,908 fish were sampled during the late strata (Appendix A). However, budgetary restrictions for the Chinook Salmon Research Initiative (CSRI) beginning in 2015 resulted in reducing the scope of the project to only sampling commercial harvests in KMA for the 2015 and 2016 fishing seasons. Thus, harvests in Chignik, North Alaska Peninsula, and South Alaska Peninsula areas were only sampled during a single season, 2014. Given the inherent interannual variability in stock abundance and movements, environmental conditions, fishing operations and other normal factors in sampling fisheries, ADF&G's policy and best practices for genetic mixed stock analyses (MSA) are to begin with 3 years of samples. The experience from 25 years of MSA in multiple fisheries has demonstrated that the results from a single year cannot be reliably extrapolated to other years.

Despite collecting samples for only 1 year, harvest sampling was well designed and successful and can be expected to represent harvests in 2014. In addition, the absence of historical data from Chinook salmon harvests in the Chignik and South Alaska Peninsula areas led to considerable interest in the samples collected in 2014 from these regions (Appendix A). Given the lack of multiyear context and lack of funding for the analysis, the decision was made to analyze the samples from Chignik (not including Chignik Bay) and South Peninsula as a single mixture stratified by harvest in 4 spatiotemporal strata originally defined in the operational plan: 1) Chignik, Eastern/Central/Western/Perryville districts (272/273/275), late strata; 2) South Peninsula, Southeastern/Southcentral districts (282/283), early strata; 3) South Peninsula, Southeastern/Southcentral districts (282/283), late strata; and 4) South Peninsula, Unimak/Southwestern districts (284/285), early strata (Foster and Dann 2014; Appendix A). This approach was designed to provide estimates for the larger area while accounting for the variation across pace and time. Genetic stock composition estimates for specific areas are more likely to have higher interannual variation due to statistical sampling error. Regardless, age, sex, and length and CWT data are presented for the original spatiotemporal strata to provide context for the MSA results.

# METHODS

A single spatiotemporal stratum was created to represent harvest from the Eastern, Central, Western, and Perryville districts of the Chignik Management Area from July 6 to August 5; the Southeastern and Southcentral districts of the South Peninsula Management Area from June 1 to August 5; and the Unimak and Southwestern districts of the South Peninsula Management Area from June 1 to July 5 (Appendix A). A subset of 380 samples was selected for analysis from all the samples collected proportional to harvest in each stratum (Foster and Dann 2014). Within strata samples were selected from the available samples in proportion to the daily harvest. If the correct proportion of the 380-sample goal was not available on a given sample day, all of the

available samples were used and the remaining proportion available was selected from the remaining days until the 380-sample goal was achieved.

# RESULTS

In 2014, the total harvest of Chinook salmon in the strata sampled in the Chignik Districts outside of Chignik Bay and the South Peninsula Management Area was 12,209 fish (Appendix A). The stock composition for this harvest consisted mainly of British Columbia (42.3%), West Coast US (21.9%), Eastern Bering Sea (20.5%), and Southeast Alaska/Northeast Gulf of Alaska groups (Appendix B1–B2). No other reporting groups contributed to greater than 5% of the mixture. Estimated harvests of the largest contributors were British Columbia, 5,169 fish; West Coast US, 2,678 fish; Eastern Bering Sea, 2,498 fish; and Southeast Alaska/Northeast Gulf of Alaska, 954 fish. Harvest from the Chignik stock group, the nearest local indicator stock was limited to 281 fish (Appendix B1–B2).

Estimates of age, size, sex, and the percentage of adipose clipped fish by stratum are found in Appendix B3–B10. The Chignik Bay late stratum harvest was dominated by age-1.3 and -1.2 fish (Appendix B3), whereas the harvest in the Eastern/Central/Western/Perryville districts of Chignik during the same period was dominated by age-0.3 and -0.2 fish (Appendix B5). Harvest in the Southeastern/Southcentral districts of the South Peninsula was dominated (in order of prevalence) by age-1.3, -1.2, and 0.3 fish in the early stratum but changed in the late stratum to mostly age-0.3, followed by age-1.2, and -1.3 fish (Appendix B7). The Unimak/Southwestern districts of the South Peninsula was dominated by age-1.3 and -1.2 fish in the early stratum harvest (Appendix B9).

The percentage of Chinook salmon that possessed an adipose finclip in Chignik Bay late stratum harvest samples was 1.2% (Appendix B4), whereas the Eastern/Central/Western/Perryville districts of Chignik was 3.8% (Appendix B6). The percentage of Chinook salmon that possessed an adipose finclip in Southeastern/Southcentral districts harvest samples was 3.7% in the early stratum, but increased to 6.0% in the late stratum (Appendix B8). The percentage of Chinook salmon that possessed an adipose finclip in Unimak/Southwestern districts early stratum harvest samples of the South Peninsula was 0.5% (Appendix B10).

# DISCUSSION

The 2014 Chinook salmon stock contribution estimates from the combined Chignik and South Peninsula management areas were generally similar to the overall Kodiak results. British Columbia and West Coast US were the largest contributors, accounting for approximately 64% of the harvest (Appendix B1–B2). All of the CWT recoveries originated in these areas (Appendix B11). The major difference between compositions in Chignik/South Peninsula and Kodiak management areas was the presence of Eastern Bering Sea fish (20.5%; Appendix B1–B2). While this stock group was detected occasionally in Kodiak area fisheries, its greatest estimated contribution was 2.7% of the harvest. The Eastern Bering Sea reporting group is a composite of a large number of populations spawning in the Nushagak, Kuskokwim, and Yukon rivers and the smaller coastal drainages from Bristol Bay to Norton Sound. While this large group contains smaller, genetically distinct subgroups, further distinction into smaller units would lead to an attendant loss of accuracy and precision.

Age composition of the commercial harvest samples demonstrate a mix of both *stream-type* (age-1.x) and *ocean-type* (age-0.x) fish (Healy 1991); however, their relative proportions differ

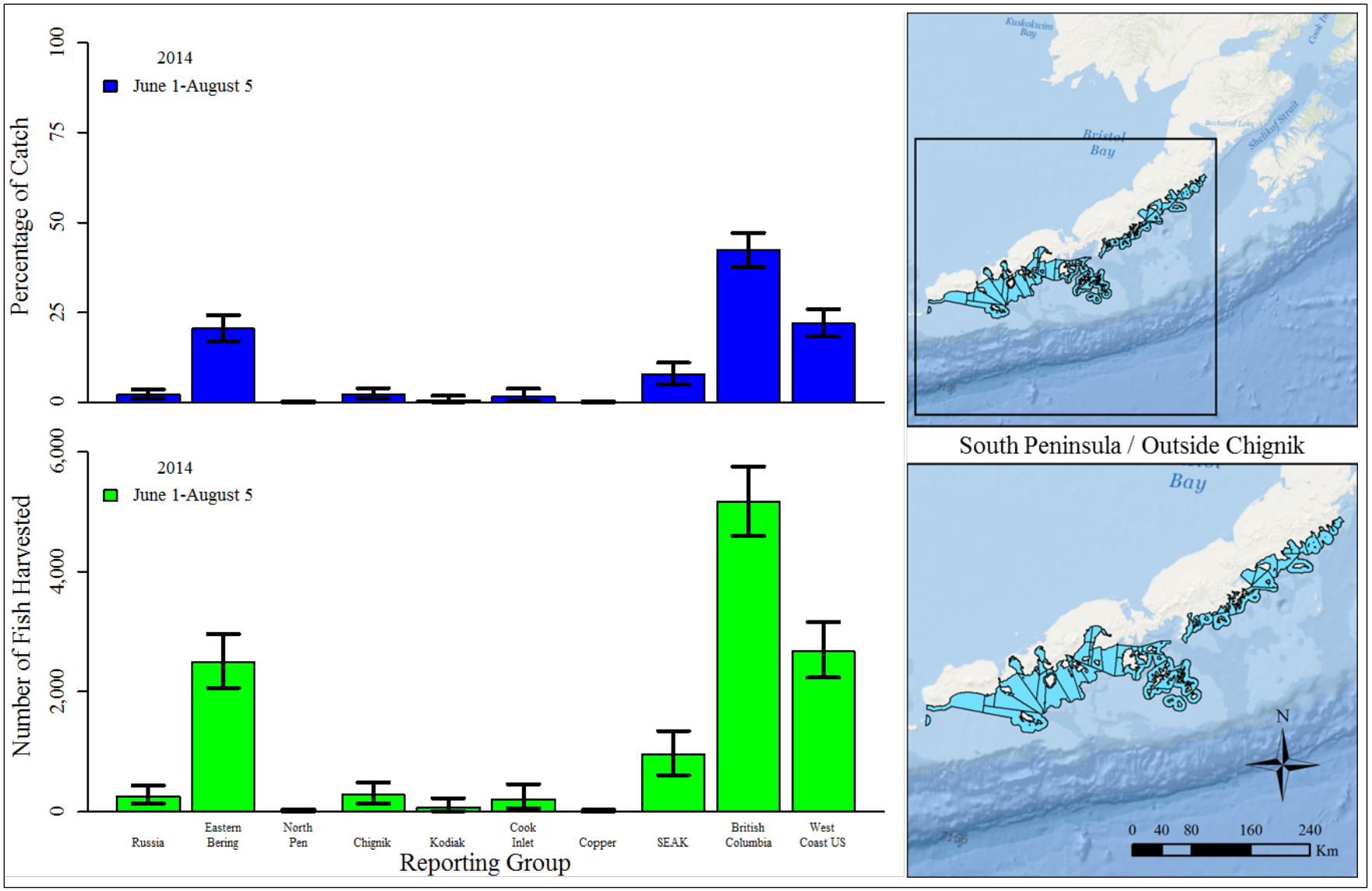
in the areas and times sampled. In general, the size and age of the Chinook salmon sampled was both older and larger than those observed and sampled in the Kodiak commercial harvest study (Appendix D). The percentage of Chinook salmon that possessed an adipose finclip in the Chignik and South Peninsula harvest samples was significantly lower than observed in the overall Kodiak commercial harvest samples.

Despite collecting samples for only 1 year, harvest sampling was well designed and successfully implemented and can be expected to represent harvest in 2014. Given the inherent interannual variability in stock abundance and movements, environmental conditions, fishing operations, and other normal factors affecting fisheries, ADF&G's policy and best practices for genetic mixed stock analyses require 3 years of fishery coverage when first reporting stock composition analyses. The experience from 25 years of MSA in multiple fisheries has demonstrated that the results from a single year may not reliably apply to other years, and having 3 years of observations provides an opportunity to sample the fishery under a range of environmental and fishery conditions to gain a measure of variation.

Appendix B1.–Annual estimates of stock composition (%) and stock-specific harvest for the South Peninsula and Chignik Management Areas, Alaska 2014 (June 1–August 5; Harvest = 12,209; $n$ = 376). 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 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 90% CI | | | | | | 90% CI | | | |
| Reporting Group | Median | 5% | 95% | $P$ = 0 | Mean | SD | Median | 5% | 95% | Mean | SD |
| Russia | 2.1 | 1.1 | 3.6 | 0.00 | 2.2 | 0.8 | 257 | 134 | 436 | 268 | 93 |
| Eastern Bering Sea | 20.5 | 16.9 | 24.3 | 0.00 | 20.5 | 2.2 | 2,498 | 2,064 | 2,962 | 2,503 | 273 |
| North Alaska Peninsula | 0.0 | 0.0 | 0.3 | 0.42 | 0.0 | 0.2 | 0 | 0 | 35 | 6 | 19 |
| Chignik | 2.3 | 1.1 | 4.0 | 0.00 | 2.4 | 0.9 | 281 | 136 | 487 | 292 | 108 |
| Kodiak | 0.6 | 0.0 | 1.8 | 0.01 | 0.7 | 0.6 | 72 | 6 | 224 | 88 | 70 |
| Cook Inlet | 1.7 | 0.5 | 3.8 | 0.00 | 1.9 | 1.0 | 209 | 58 | 460 | 227 | 125 |
| Copper | 0.0 | 0.0 | 0.2 | 0.43 | 0.0 | 0.1 | 0 | 0 | 28 | 5 | 16 |
| Southeast Alaska/Northeast Gulf of Alaska | 7.8 | 5.0 | 11.0 | 0.00 | 7.9 | 1.8 | 954 | 612 | 1,345 | 963 | 224 |
| British Columbia | 42.3 | 37.6 | 47.1 | 0.00 | 42.4 | 2.9 | 5,169 | 4,596 | 5,756 | 5,172 | 352 |
| West Coast US | 21.9 | 18.3 | 25.9 | 0.00 | 22.0 | 2.3 | 2,678 | 2,235 | 3,160 | 2,685 | 282 |
| | | | | | | | | | Total | 12,209 | |

*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.




Appendix B2.–Stock composition and stock-specific harvest estimates (medians) and 90% credibility intervals of samples of Chinook salmon commercial harvest from the South Peninsula and Chignik Management Areas, Alaska 2014.

Appendix B3.–Age composition estimates for temporal stratum 2 ("Late"; July 1–August 5; Harvest = 239; *n* = 73) of the Chignik Bay District (District 271), Chignik Management Area, Westward Region, 2014. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Late | | | | |
|---|---|---|---|---|---|
| | | | 90% CI | | |
| Age Class | Number | Proportion | 5% | 95% | SE |
| 0.1 | 5 | 0.07 | 0.01 | 0.12 | 0.030 |
| 0.2 | 8 | 0.11 | 0.04 | 0.18 | 0.037 |
| 0.3 | 7 | 0.10 | 0.03 | 0.16 | 0.035 |
| 0.4 | 0 | – | – | – | – |
| 1.1 | 9 | 0.12 | 0.05 | 0.19 | 0.039 |
| 1.2 | 17 | 0.23 | 0.14 | 0.32 | 0.050 |
| 1.3 | 22 | 0.30 | 0.20 | 0.40 | 0.054 |
| 1.4 | 5 | 0.07 | 0.01 | 0.12 | 0.030 |
| 2.2 | 0 | – | – | – | – |
| 2.3 | 0 | – | – | – | – |
| Total | 73 | 1.00 | | | |

Appendix B4.–Length, sex, and adipose clip composition estimates by age for temporal stratum 2 ("Late"; July 1–August 5; Harvest = 239; *n* = 84) of the Chignik Bay District (District 271), Chignik Management Area, Westward Region, 2014. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Late | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | |
| | | | 90% CI | | | % | % |
| Age Class | Number | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 5 | 385 | 359 | 412 | 16.1 | 0.0 | 0.0 |
| 0.2 | 8 | 571 | 518 | 624 | 31.8 | 16.7 | 12.5 |
| 0.3 | 7 | 779 | 742 | 816 | 22.4 | 71.4 | 0.0 |
| 0.4 | – | – | – | – | – | – | – |
| 1.1 | 9 | 399 | 383 | 414 | 9.2 | 0.0 | 0.0 |
| 1.2 | 17 | 616 | 590 | 642 | 15.6 | 11.8 | 0.0 |
| 1.3 | 22 | 783 | 759 | 806 | 14.1 | 31.8 | 0.0 |
| 1.4 | 5 | 883 | 836 | 930 | 28.1 | 60.0 | 0.0 |
| 2.2 | – | – | – | – | – | – | – |
| 2.3 | – | – | – | – | – | – | – |
| Unknown | 11 | 564 | 479 | 650 | 51.3 | 11.1 | 0.0 |
| Total | 84 | 641 | 610 | 672 | 18.5 | 26.8 | 1.2 |

Appendix B5.–Age composition estimates for temporal stratum 2 ("Late"; July 1–August 5; Harvest = 5,684; *n* = 414) of the Eastern/Central/Western/Perryville Districts (District 272, 273, 275), Chignik Management Area, Westward Region, 2014. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Late | | | | |
|---|---|---|---|---|---|
| | | | 90% CI | | |
| Age Class | Number | Proportion | 5% | 95% | SE |
| 0.1 | 22 | 0.05 | 0.03 | 0.07 | 0.011 |
| 0.2 | 93 | 0.22 | 0.19 | 0.26 | 0.021 |
| 0.3 | 190 | 0.46 | 0.42 | 0.50 | 0.025 |
| 0.4 | 8 | 0.02 | 0.01 | 0.03 | 0.007 |
| 1.1 | 5 | 0.01 | 0.00 | 0.02 | 0.005 |
| 1.2 | 42 | 0.10 | 0.08 | 0.13 | 0.015 |
| 1.3 | 50 | 0.12 | 0.09 | 0.15 | 0.016 |
| 1.4 | 1 | 0.00 | – | – | – |
| 2.2 | 3 | 0.01 | 0.00 | 0.02 | 0.004 |
| 2.3 | 0 | – | – | – | – |
| Total | 414 | 1.00 | | | |

Appendix B6.–Length, sex, and adipose clip composition estimates by age for temporal stratum 2 ("Late"; July 1–August 5; Harvest = 5,684; *n* = 414) of the Eastern/Central/Western/Perryville Districts (District 272, 273, 275), Chignik Management Area, Westward Region, 2014. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Late | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | |
| | | | 90% CI | | | % | % |
| Age Class | Number | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 22 | 373 | 366 | 381 | 4.8 | 11.1 | 0.0 |
| 0.2 | 93 | 582 | 571 | 593 | 6.7 | 61.8 | 3.2 |
| 0.3 | 190 | 688 | 681 | 694 | 4.1 | 81.6 | 2.6 |
| 0.4 | 8 | 829 | 783 | 874 | 27.5 | 87.5 | 12.5 |
| 1.1 | 5 | 500 | 416 | 584 | 50.9 | 25.0 | 0.0 |
| 1.2 | 42 | 652 | 637 | 667 | 9.1 | 66.7 | 4.8 |
| 1.3 | 50 | 763 | 744 | 782 | 11.6 | 66.0 | 2.0 |
| 1.4 | 1 | 900 | – | – | – | 0.0 | 0.0 |
| 2.2 | 3 | 669 | 607 | 730 | 37.2 | 66.7 | 0.0 |
| 2.3 | 0 | – | – | – | – | – | – |
| Unknown | 137 | 591 | 574 | 609 | 10.4 | 58.4 | 6.6 |
| Total | 551 | 638 | 630 | 646 | 5.0 | 67.2 | 3.8 |

Appendix B7.–Age composition estimates for temporal stratum 1 ("Early"; June 1–June 30; Harvest = 1,287; n = 256) and 2 (July 1-July 31; Harvest = 4,236; *n* = 336) of the Southeastern/Southcentral Districts (District 282, 283), South Peninsula, Alaska Peninsula Management Area, Westward Region, 2014. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | Number | Proportion | 5% | 95% | SE | Number | Proportion | 5% | 95% | SE |
| 0.1 | 0 | – | – | – | – | 0 | – | – | – | – |
| 0.2 | 7 | 0.03 | 0.01 | 0.05 | 0.010 | 16 | 0.05 | 0.03 | 0.07 | 0.012 |
| 0.3 | 47 | 0.18 | 0.14 | 0.23 | 0.024 | 152 | 0.45 | 0.41 | 0.50 | 0.027 |
| 0.4 | 7 | 0.03 | 0.01 | 0.05 | 0.010 | 4 | 0.01 | 0.00 | 0.02 | 0.006 |
| 1.1 | 3 | 0.01 | 0.00 | 0.02 | 0.007 | 1 | 0.00 | – | – | – |
| 1.2 | 56 | 0.22 | 0.17 | 0.26 | 0.026 | 85 | 0.25 | 0.21 | 0.29 | 0.024 |
| 1.3 | 109 | 0.43 | 0.37 | 0.48 | 0.031 | 74 | 0.22 | 0.18 | 0.26 | 0.023 |
| 1.4 | 26 | 0.10 | 0.07 | 0.13 | 0.019 | 2 | 0.01 | 0.00 | 0.01 | 0.004 |
| 2.2 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.3 | 1 | 0.00 | – | – | – | 2 | 0.01 | 0.00 | 0.01 | 0.004 |
| Total | 256 | 1.00 | | | | 336 | 1.00 | | | |

Appendix B8.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1-June 30; Harvest = 1,287; *n* = 321) and 2 (July 1-July 31; Harvest = 4,236; *n* = 385) of the Southeastern/Southcentral Districts (District 282, 283), South Peninsula, Alaska Peninsula Management Area, Westward Region, 2014. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | Number | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | Number | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 0.2 | 7 | 564 | 507 | 620 | 34.5 | 14.3 | 0.0 | 16 | 624 | 607 | 641 | 10.2 | 92.9 | 0.0 |
| 0.3 | 47 | 686 | 675 | 697 | 6.4 | 71.1 | 6.3 | 152 | 680 | 675 | 685 | 3.3 | 88.2 | 7.2 |
| 0.4 | 7 | 838 | 803 | 874 | 21.7 | 71.4 | 0.0 | 4 | 809 | 767 | 850 | 25.2 | 100.0 | 25.0 |
| 1.1 | 3 | 362 | 353 | 371 | 5.6 | 0.0 | 100.0 | 1 | 651 | – | – | – | 100.0 | 0.0 |
| 1.2 | 56 | 657 | 647 | 666 | 5.8 | 37.5 | 3.6 | 85 | 651 | 643 | 659 | 4.8 | 80.0 | 0.0 |
| 1.3 | 109 | 773 | 763 | 783 | 6.1 | 45.9 | 0.9 | 74 | 714 | 691 | 737 | 13.9 | 80.0 | 6.8 |
| 1.4 | 26 | 862 | 840 | 883 | 13.0 | 68.0 | 3.8 | 2 | 844 | 668 | 1,020 | 107.0 | 100.0 | 50.0 |
| 2.2 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.3 | 1 | 810 | – | – | – | 0.0 | 0.0 | 2 | 718 | 581 | 854 | 82.5 | 100.0 | 0.0 |
| Unknown | 65 | 734 | 713 | 755 | 12.7 | 47.7 | 3.1 | 49 | 682 | 642 | 722 | 24.2 | 76.1 | 10.2 |
| Total | 321 | 732 | 723 | 742 | 5.6 | 49.4 | 3.7 | 385 | 680 | 673 | 688 | 4.7 | 83.8 | 6.0 |

Appendix B9.–Age composition estimates for temporal stratum 1 ("Early"; June 1–June 30; Harvest = 1,002; *n* = 336) of the Unimak/Southwestern Districts (District 284, 285), South Peninsula, Alaska Peninsula Management Area, Westward Region, 2014. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | |
|---|---|---|---|---|---|
| | | | 90% CI | | |
| Age Class | Number | Proportion | 5% | 95% | SE |
| 0.1 | 0 | – | – | – | – |
| 0.2 | 17 | 0.05 | 0.03 | 0.07 | 0.012 |
| 0.3 | 30 | 0.09 | 0.06 | 0.12 | 0.016 |
| 0.4 | 4 | 0.01 | 0.00 | 0.02 | 0.006 |
| 1.1 | 0 | – | – | – | – |
| 1.2 | 93 | 0.28 | 0.23 | 0.32 | 0.024 |
| 1.3 | 151 | 0.45 | 0.40 | 0.50 | 0.027 |
| 1.4 | 40 | 0.12 | 0.09 | 0.15 | 0.018 |
| 2.2 | 1 | 0.00 | – | – | – |
| 2.3 | 0 | – | – | – | – |
| Total | 336 | 1.00 | | | |

Appendix B10.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–June 30; Harvest = 1,002; *n* = 336) of the Unimak/Southwestern Districts (District 284, 285), South Peninsula, Alaska Peninsula Management Area, Westward Region, 2014. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | |
| | | | 90% CI | | | | |
| Class | Number | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 0 | – | – | – | – | – | – |
| 0.2 | 17 | 559 | 532 | 585 | 15.9 | 6.7 | 0.0 |
| 0.3 | 30 | 698 | 677 | 719 | 12.6 | 53.3 | 0.0 |
| 0.4 | 4 | 798 | 763 | 833 | 21.3 | 100.0 | 0.0 |
| 1.1 | 0 | – | – | – | – | – | – |
| 1.2 | 93 | 618 | 604 | 632 | 8.6 | 21.5 | 1.1 |
| 1.3 | 151 | 753 | 740 | 766 | 7.8 | 51.0 | 0.0 |
| 1.4 | 40 | 885 | 873 | 897 | 7.3 | 57.5 | 0.0 |
| 2.2 | 1 | 660 | – | – | – | 100.0 | 0.0 |
| 2.3 | 0 | – | – | – | – | – | – |
| Unknown | 69 | 724 | 696 | 751 | 16.6 | 38.2 | 1.4 |
| Total | 405 | 718 | 708 | 728 | 6.2 | 41.8 | 0.5 |

Appendix B11.–Chinook salmon coded wire tag recoveries from the commercial fishery in the Chignik and South Peninsula areas, 2014.

| State/Province-Country<br>Specific Location | |
|---|---|
| British Columbia-Canada | 17 |
| H-Deep Creek/ Skeena Hatchery | 1 |
| H-Robertson Creek Hatchery | 8 |
| H-Snootli Creek Hatchery | 6 |
| H-Toboggan Creek Hatchery | 1 |
| H-Tofino Hatchery | 1 |
| Washington-USA | 9 |
| (W) Hanford Reach Stock | 1 |
| (W) Lewis R -Nf 27.0168 | 1 |
| Chelan Falls Hatchery | 1 |
| Hoko Falls Hatchery | 1 |
| Little White Salmon National Fish Hatchery | 1 |
| Quinault Lake Hatchery | 1 |
| Salmon River Hatchery | 2 |
| Wells Hatchery | 1 |
| Oregon-USA | 5 |
| Marion Forks Hatch | 3 |
| Mckenzie Hatchery | 2 |
| Total CWT | 31 |
| Total Chinook salmon inspected | 1,749 |
| % CWT | 1.8 |

# APPENDIX C: SAMPLE SELECTION SUMMARY

Appendix C1.–Daily commercial Chinook salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of the Northwest Kodiak/Afognak (251, 253, 254), 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 | | | 12 | 22 | 21 |
| | 3-Jun | 0 | | | 86 | 32 | 22 | 19 | | |
| | 4-Jun | 0 | | | 76 | 37 | 27 | 5 | 5 | 2 |
| | 5-Jun | 20 | | | 62 | 43 | 33 | 0 | | |
| | 6-Jun | 16 | 9 | 9 | 0 | | | 0 | | |
| | 7-Jun | 26 | 21 | 1 | 0 | | | 0 | | |
| | 8-Jun | 29 | 15 | 15 | 0 | | | 33 | 9 | 6 |
| | 9-Jun | 44 | 25 | 25 | 27 | 25 | 15 | 41 | 44 | 24 |
| | 10-Jun | 30 | 10 | | 56 | 33 | 23 | 10 | 11 | 11 |
| | 11-Jun | 38 | 28 | | 38 | 50 | 40 | 0 | | |
| | 12-Jun | 21 | 30 | 30 | 0 | 10 | | 0 | | |
| | 13-Jun | 67 | 8 | 8 | 0 | | | 0 | | |
| | 14-Jun | 17 | 35 | | 52 | 55 | 22 | 35 | 24 | 19 |
| | 15-Jun | 20 | 11 | 11 | 53 | 24 | 24 | 27 | 37 | 15 |
| | 16-Jun | 27 | 33 | 30 | 27 | 15 | 15 | 58 | 52 | 27 |
| | 17-Jun | 12 | 12 | 1 | 54 | 35 | 21 | 45 | 44 | 23 |
| | 18-Jun | 12 | 10 | 10 | 35 | 28 | 18 | 61 | 68 | 20 |
| | 19-Jun | 0 | | | 34 | 19 | 9 | 31 | 33 | |
| | 20-Jun | 0 | | | 9 | | | 47 | 2 | 2 |
| | 21-Jun | 62 | 24 | | 23 | 10 | | 53 | 5 | 5 |
| | 22-Jun | 102 | 74 | 67 | 30 | 16 | 16 | 19 | 26 | 24 |
| | 23-Jun | 27 | 11 | 1 | 47 | 32 | 22 | 32 | 28 | 18 |
| | 24-Jun | 25 | 21 | 21 | 50 | 39 | 19 | 56 | 40 | 30 |
| | 25-Jun | 35 | 31 | | 34 | 5 | 5 | 50 | 18 | 18 |
| | 26-Jun | 66 | 37 | 37 | 62 | | | 35 | | |
| | 27-Jun | 95 | 49 | | 84 | | | 24 | | |
| | 28-Jun | 30 | 66 | 58 | 45 | | | 48 | 53 | 52 |
| | 29-Jun | 24 | 20 | | 68 | 27 | 17 | 0 | | |
| | 30-Jun | 40 | 30 | 30 | 36 | 14 | 14 | 0 | | |
| | 1-Jul | 15 | 14 | | 317 | 10 | 10 | 0 | | |
| | 2-Jul | 18 | 12 | 12 | 27 | | | 0 | | |
| | 3-Jul | 18 | | 3 | 54 | | | 92 | 50 | 50 |
| | 4-Jul | 13 | 11 | | 24 | | | 105 | 12 | 12 |
| | 5-Jul | 26 | 10 | 10 | 16 | 8 | 8 | 66 | | |
| Period Subtotal | | 975 | 657 | 379 | 1,526 | 567 | 380 | 1,004 | 583 | 379 |

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

Appendix C2.–Daily commercial Chinook salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 2 of the Northwest Kodiak/Afognak (251, 253, 254), 2014–2016.

| | | 2014 | | | 2015 | | | 2016 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Temporal | | | Genetic | | | Genetic | | | Genetic | |
| Stratum | Date(s) | Harvest | Samp. | Anlyz. | Harvest | Samp. | Anlyz. | Harvest | Samp. | Anlyz. |
| 2 | 6-Jul | 17 | 15 | 15 | 85 | 7 | 7 | 69 | 10 | 10 |
| | 7-Jul | 17 | 15 | 15 | 78 | 64 | 54 | 84 | 55 | 30 |
| | 8-Jul | 14 | 4 | 4 | 52 | 30 | 30 | 49 | 19 | 3 |
| | 9-Jul | 42 | 18 | 18 | 0 | | | 80 | 57 | 44 |
| | 10-Jul | 52 | 1 | 1 | 0 | | | 38 | 45 | 26 |
| | 11-Jul | 0 | | | 0 | | | 0 | | |
| | 12-Jul | 0 | | | 0 | | | 0 | | |
| | 13-Jul | 14 | 19 | 19 | 80 | 6 | 6 | 0 | | |
| | 14-Jul | 44 | 28 | 28 | 42 | 20 | 20 | 128 | 77 | 76 |
| | 15-Jul | 29 | 13 | 13 | 37 | 37 | 37 | 43 | 39 | 39 |
| | 16-Jul | 25 | 11 | 11 | 63 | 4 | 4 | 41 | 10 | 10 |
| | 17-Jul | 17 | 5 | 5 | 92 | 38 | 38 | 48 | | |
| | 18-Jul | 0 | | | 0 | | | 0 | | |
| | 19-Jul | 0 | | | 0 | | | 0 | | |
| | 20-Jul | 40 | 12 | 12 | 52 | 47 | 33 | 0 | | |
| | 21-Jul | 13 | 7 | 7 | 45 | 24 | 24 | 0 | | |
| | 22-Jul | 114 | 130 | 110 | 84 | 6 | 6 | 90 | 75 | 75 |
| | 23-Jul | 29 | | | 20 | 7 | 7 | 25 | 4 | 4 |
| | 24-Jul | 37 | | | 57 | 18 | 18 | 54 | 10 | 10 |
| | 25-Jul | 0 | | | 13 | 6 | 6 | 52 | | |
| | 26-Jul | 0 | 12 | | 41 | 16 | 16 | 0 | | |
| | 27-Jul | 22 | 10 | 6 | 11 | 28 | 28 | 0 | | |
| | 28-Jul | 11 | | 10 | 25 | 11 | 11 | 0 | | |
| | 29-Jul | 16 | 3 | 3 | 7 | 6 | 6 | 0 | | |
| | 30-Jul | 71 | 12 | 12 | 0 | 2 | 2 | 156 | 23 | 23 |
| | 31-Jul | 90 | 29 | 29 | 0 | | | 65 | 29 | 29 |
| | 1-Aug | 0 | | | 0 | | | 72 | | |
| | 2-Aug | 0 | | | 10 | 13 | 13 | 0 | | |
| | 3-Aug | 23 | 20 | 20 | 8 | 3 | 3 | 0 | | |
| | 4-Aug | 68 | 32 | 32 | 17 | 2 | 2 | 0 | | |
| | 5-Aug | 41 | 10 | 10 | 13 | 9 | 9 | 0 | | |
| Period Subtotal | | 846 | 406 | 380 | 932 | 404 | 380 | 1,094 | 453 | 379 |

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

Appendix C3.–Daily commercial Chinook salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of the Southwest Kodiak/Alitak (255, 256, 257), 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 | 0 | | | 0 | | | 0 | | |
| | 5-Jun | 5 | | | 0 | | | 0 | | |
| | 6-Jun | 0 | 1 | 1 | 0 | | | 0 | | |
| | 7-Jun | 9 | 4 | 4 | 0 | | | 0 | | |
| | 8-Jun | 1 | | | 0 | | | 0 | | |
| | 9-Jun | 2 | | | 0 | | | 0 | | |
| | 10-Jun | 7 | 3 | 3 | 0 | | | 0 | | |
| | 11-Jun | 1 | | | 0 | | | 0 | | |
| | 12-Jun | 0 | | | 0 | | | 0 | | |
| | 13-Jun | 0 | | | 0 | | | 0 | | |
| | 14-Jun | 0 | 6 | 6 | 0 | 14 | 14 | 7 | | |
| | 15-Jun | 7 | 1 | 1 | 48 | 1 | 1 | 0 | 33 | 33 |
| | 16-Jun | 0 | 2 | 2 | 42 | 33 | 33 | 29 | 3 | 3 |
| | 17-Jun | 0 | | | 44 | 43 | 43 | 9 | | |
| | 18-Jun | 8 | | | 48 | 28 | 28 | 0 | | |
| | 19-Jun | 0 | | | 15 | | | 134 | 100 | 100 |
| | 20-Jun | 0 | | | 24 | 51 | 51 | 0 | | |
| | 21-Jun | 27 | 35 | 35 | 24 | 12 | 12 | 10 | 26 | 26 |
| | 22-Jun | 12 | 32 | 32 | 19 | 5 | 5 | 0 | | |
| | 23-Jun | 37 | 32 | 32 | 37 | | | 11 | 9 | 9 |
| | 24-Jun | 17 | 4 | 4 | 18 | | | 2 | 2 | 2 |
| | 25-Jun | 93 | | | 0 | | | 67 | 99 | 99 |
| | 26-Jun | 59 | 86 | 86 | 8 | | | 1 | 17 | 17 |
| | 27-Jun | 32 | 25 | 25 | 71 | 13 | 13 | 25 | | |
| | 28-Jun | 0 | 28 | 28 | 4 | 44 | 44 | 0 | | |
| | 29-Jun | 12 | | | 35 | 33 | 33 | 0 | | |
| | 30-Jun | 0 | 2 | 2 | 16 | | | 0 | | |
| | 1-Jul | 32 | | | 26 | | | 0 | | |
| | 2-Jul | 20 | 6 | 6 | 7 | | | 0 | | |
| | 3-Jul | 18 | 20 | 20 | 25 | | | 3 | 3 | 3 |
| | 4-Jul | 6 | | | 0 | | | 18 | 7 | 7 |
| | 5-Jul | 9 | | | 0 | 30 | 30 | 31 | 11 | 11 |
| Period Subtotal | | 414 | 287 | 287 | 511 | 307 | 307 | 347 | 310 | 310 |

*Note*: The number of samples collected is as reported in the field and may be less than the number of samples genotyped. Seventy fish sampled on July 6, 2015, were put into the early stratum in order to reach sampling goals.

Appendix C4.–Daily commercial Chinook salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 2 of the Southwest Kodiak/Alitak (255, 256, 257), 2014–2016.

| | | 2014 | | | 2015 | | | 2016 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Temporal | | | Genetic | | | Genetic | | | Genetic | |
| Stratum | Date(s) | Harvest | Samp. | Anlyz. | Harvest | Samp. | Anlyz. | Harvest | Samp. | Anlyz. |
| 2 | 6-Jul | 61 | | | 572 | 136 | 126 | 28 | 32 | 32 |
| | 7-Jul | 9 | 37 | 36 | 128 | | | 21 | | |
| | 8-Jul | 33 | 7 | 7 | 314 | 50 | 48 | 0 | | |
| | 9-Jul | 55 | 10 | 10 | 235 | 61 | 51 | 1 | | |
| | 10-Jul | 97 | | | 0 | | | 0 | | |
| | 11-Jul | 0 | | | 0 | | | 0 | | |
| | 12-Jul | 0 | | | 0 | | | 0 | | |
| | 13-Jul | 68 | 12 | 12 | 144 | 56 | 40 | 32 | 4 | 4 |
| | 14-Jul | 15 | | | 135 | 63 | 53 | 123 | 110 | 110 |
| | 15-Jul | 67 | 41 | 40 | 59 | 7 | 7 | 27 | 4 | 4 |
| | 16-Jul | 8 | 12 | 12 | 26 | | | 48 | 41 | 41 |
| | 17-Jul | 26 | 17 | 17 | 67 | | | 63 | 31 | 31 |
| | 18-Jul | 0 | | | 0 | | | 0 | | |
| | 19-Jul | 0 | | | 0 | | | 0 | | |
| | 20-Jul | 9 | 6 | 6 | 72 | 13 | 13 | 0 | | |
| | 21-Jul | 61 | 38 | 38 | 32 | 39 | 39 | 0 | | |
| | 22-Jul | 18 | 27 | 27 | 7 | | | 26 | 3 | 3 |
| | 23-Jul | 46 | 55 | 32 | 0 | | | 4 | | |
| | 24-Jul | 59 | 57 | 34 | 20 | 31 | 31 | 13 | 18 | 18 |
| | 25-Jul | 0 | | | 4 | 2 | 2 | 1 | | |
| | 26-Jul | 1 | 6 | 6 | 0 | | | 0 | | |
| | 27-Jul | 7 | | | 9 | 13 | 13 | 0 | | |
| | 28-Jul | 80 | 20 | 20 | 7 | | | 0 | | |
| | 29-Jul | 29 | 19 | 19 | 45 | 5 | 5 | 0 | | |
| | 30-Jul | 78 | 1 | 1 | 12 | 10 | 10 | 19 | 10 | 10 |
| | 31-Jul | 86 | 11 | 11 | 14 | | | 1 | 11 | 11 |
| | 1-Aug | 0 | | | 86 | | | 2 | | |
| | 2-Aug | 0 | | | 8 | | | 2 | 2 | 2 |
| | 3-Aug | 79 | | | 23 | 10 | 10 | 16 | 25 | 25 |
| | 4-Aug | 205 | 50 | 50 | 9 | | | 0 | | |
| | 5-Aug | 83 | | | 14 | | | 0 | | |
| Period Subtotal | | 1,280 | 426 | 378 | 2,042 | 496 | 448 | 427 | 291 | 291 |

*Note*: The number of samples collected is as reported in the field and may be less than the number of samples genotyped. Seventy fish sampled on July 6, 2015, were put into the early stratum in order to reach sampling goals.

Appendix C5.–Daily commercial Chinook salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of the Eastside Kodiak/Afognak (258, 259, 252), 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 | | | 10 | 7 | 7 | 1 | 1 | 1 |
| | 4-Jun | 0 | | | 3 | | | 0 | | |
| | 5-Jun | 0 | | | 68 | 15 | 15 | 0 | | |
| | 6-Jun | 4 | | | 5 | | | 0 | | |
| | 7-Jun | 3 | | | 0 | | | 0 | 2 | 2 |
| | 8-Jun | 24 | | | 58 | | | 10 | | |
| | 9-Jun | 6 | | | 23 | | | 2 | 8 | 8 |
| | 10-Jun | 2 | | | 28 | 17 | 17 | 1 | | |
| | 11-Jun | 9 | | | 8 | 35 | 25 | 4 | | |
| | 12-Jun | 2 | | | 62 | 3 | 1 | 0 | | |
| | 13-Jun | 4 | | | 11 | 50 | 40 | 0 | | |
| | 14-Jun | 20 | | | 89 | 89 | 67 | 34 | 15 | 15 |
| | 15-Jun | 7 | 5 | 5 | 19 | 38 | 38 | 1 | 24 | 24 |
| | 16-Jun | 6 | 19 | 19 | 45 | 27 | 27 | 0 | 2 | 2 |
| | 17-Jun | 0 | | | 75 | | | 3 | 3 | 3 |
| | 18-Jun | 1 | 4 | 4 | 1 | | | 0 | | |
| | 19-Jun | 3 | | | 37 | | | 1 | 3 | 3 |
| | 20-Jun | 2 | | | 14 | 38 | 28 | 0 | | |
| | 21-Jun | 61 | 141 | 141 | 289 | 11 | 11 | 335 | 240 | 240 |
| | 22-Jun | 19 | 29 | 29 | 126 | 49 | 49 | 2 | | |
| | 23-Jun | 42 | 28 | 27 | 53 | 3 | 3 | 30 | | |
| | 24-Jun | 7 | 13 | 13 | 62 | | | 0 | | |
| | 25-Jun | 31 | 16 | 16 | 43 | | | 3 | | |
| | 26-Jun | 7 | | | 21 | 3 | 3 | 0 | 6 | 6 |
| | 27-Jun | 40 | 4 | 4 | 50 | 3 | 3 | 9 | 3 | 3 |
| | 28-Jun | 20 | 1 | 1 | 15 | 10 | 10 | 0 | 1 | 1 |
| | 29-Jun | 17 | 8 | 8 | 46 | 13 | 13 | 0 | | |
| | 30-Jun | 5 | | | 21 | 4 | 4 | 4 | | |
| | 1-Jul | 14 | 6 | 6 | 33 | 19 | 19 | 0 | 2 | 2 |
| | 2-Jul | 3 | 5 | 5 | 6 | | | 0 | | |
| | 3-Jul | 3 | | | 65 | | | 3 | | |
| | 4-Jul | 3 | 15 | 15 | 3 | | | 3 | 4 | 4 |
| | 5-Jul | 12 | | | 11 | | | 0 | 2 | 2 |
| Period Subtotal | | 377 | 294 | 293 | 1,400 | 434 | 380 | 446 | 316 | 316 |

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

Appendix C6.–Daily commercial Chinook salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of the Eastside Kodiak/Afognak (258, 259, 252), 2014–2016.

| | | 2014 | | | 2015 | | | 2016 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Temporal | | | Genetic | | | Genetic | | | Genetic | |
| Stratum | Date(s) | Harvest | Samp. | Anlyz. | Harvest | Samp. | Anlyz. | Harvest | Samp. | Anlyz. |
| 2 | 6-Jul | 863 | 164 | 103 | 74 | 10 | 10 | 78 | 45 | 45 |
| | 7-Jul | 100 | 109 | 64 | 15 | 59 | 59 | 1 | 12 | 12 |
| | 8-Jul | 184 | 82 | 83 | 46 | 10 | 10 | 48 | | |
| | 9-Jul | 91 | 46 | 25 | 0 | | | 51 | 20 | 20 |
| | 10-Jul | 645 | | | 0 | | | 21 | 21 | 21 |
| | 11-Jul | 0 | | | 14 | 12 | 12 | 28 | | |
| | 12-Jul | 0 | | | 1 | | | 19 | 22 | 22 |
| | 13-Jul | 287 | 50 | 50 | 83 | | | 20 | 16 | 16 |
| | 14-Jul | 4 | 7 | 7 | 4 | 44 | 44 | 37 | 86 | 86 |
| | 15-Jul | 78 | | | 106 | | | 63 | 33 | 33 |
| | 16-Jul | 11 | | | 13 | 15 | 15 | 28 | 6 | 6 |
| | 17-Jul | 79 | | | 28 | 11 | 11 | 12 | 5 | 5 |
| | 18-Jul | 0 | | | 18 | | | 4 | | |
| | 19-Jul | 0 | | | 23 | | | 0 | | |
| | 20-Jul | 4 | | | 135 | 16 | 16 | 14 | 7 | 7 |
| | 21-Jul | 10 | | | 8 | | | 0 | | |
| | 22-Jul | 29 | 5 | 5 | 5 | 5 | 5 | 7 | 1 | 1 |
| | 23-Jul | 23 | | | 5 | | | 0 | 3 | 3 |
| | 24-Jul | 37 | | | 21 | 5 | 5 | 23 | 14 | 14 |
| | 25-Jul | 4 | | | 16 | | | 35 | 29 | 29 |
| | 26-Jul | 10 | 8 | 8 | 14 | 14 | 14 | 0 | | |
| | 27-Jul | 12 | 1 | 1 | 32 | 55 | 55 | 1 | | |
| | 28-Jul | 4 | 2 | 2 | 29 | 2 | 2 | 0 | | |
| | 29-Jul | 4 | | | 18 | 4 | 4 | 0 | | |
| | 30-Jul | 37 | 1 | 1 | 0 | | | 21 | 1 | 1 |
| | 31-Jul | 16 | 17 | 17 | 0 | | | 262 | | |
| | 1-Aug | 7 | | | 0 | | | 6 | 1 | 1 |
| | 2-Aug | 0 | | | 12 | 8 | 8 | 0 | | |
| | 3-Aug | 1 | 2 | 2 | 23 | 6 | 6 | 0 | | |
| | 4-Aug | 5 | 8 | 8 | 17 | | | 0 | | |
| | 5-Aug | 8 | 3 | 3 | 47 | 9 | 9 | 0 | | |
| Period Subtotal | | 2,553 | 505 | 379 | 807 | 285 | 285 | 779 | 322 | 322 |

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

Appendix C7.–Daily commercial Chinook salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 1 of the Mainland (262), 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 | 0 | | | 0 | | | 0 | | |
| | 5-Jun | 0 | | | 0 | | | 0 | | |
| | 6-Jun | 0 | | | 0 | | | 0 | | |
| | 7-Jun | 0 | | | 0 | | | 0 | | |
| | 8-Jun | 0 | | | 0 | | | 33 | 76 | 38 |
| | 9-Jun | 0 | | | 0 | | | 13 | 24 | 12 |
| | 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 | | | 92 | 131 | 120 |
| | 19-Jun | 0 | | | 0 | | | 21 | 7 | |
| | 20-Jun | 0 | | | 0 | | | 479 | 162 | 153 |
| | 21-Jun | 0 | | | 0 | | | 46 | 45 | 40 |
| | 22-Jun | 0 | | | 0 | | | 325 | | |
| | 23-Jun | 0 | | | 0 | | | 154 | | |
| | 24-Jun | 0 | | | 0 | | | 92 | | |
| | 25-Jun | 0 | | | 0 | | | 8 | | |
| | 26-Jun | 0 | | | 0 | | | 0 | 16 | 16 |
| | 27-Jun | 0 | | | 0 | | | 0 | | |
| | 28-Jun | 0 | | | 0 | | | 0 | | |
| | 29-Jun | 0 | | | 0 | | | 0 | | |
| | 30-Jun | 0 | | | 0 | | | 0 | | |
| | 1-Jul | 0 | | | 0 | | | 0 | | |
| | 2-Jul | 0 | | | 0 | | | 0 | | |
| | 3-Jul | 0 | | | 0 | | | 0 | | |
| | 4-Jul | 0 | | | 0 | | | 0 | | |
| | 5-Jul | 0 | | | 0 | | | 0 | | |
| Period Subtotal | | 0 | 0 | 0 | 0 | 0 | 0 | 1,263 | 461 | 379 |

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

Appendix C8.–Daily commercial Chinook salmon harvest, number of genetic samples collected (Samp.), and number of genetic samples analyzed (Anlyz.) for temporal stratum 2 of the Mainland (262), 2014–2016.

| | | 2014 | | | 2015 | | | 2016 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Temporal | | | Genetic | | | Genetic | | | Genetic | |
| Stratum | Date(s) | Harvest | Samp. | Anlyz. | Harvest | Samp. | Anlyz. | Harvest | Samp. | Anlyz. |
| 2 | 6-Jul | 49 | 30 | 30 | 41 | | | 172 | 113 | 69 |
| | 7-Jul | 19 | 25 | 23 | 3 | 3 | 3 | 35 | 4 | |
| | 8-Jul | 22 | | | 0 | | | 24 | | |
| | 9-Jul | 0 | | | 0 | | | 0 | | |
| | 10-Jul | 0 | | | 0 | | | 0 | | |
| | 11-Jul | 0 | | | 0 | | | 0 | | |
| | 12-Jul | 0 | | | 0 | | | 354 | | |
| | 13-Jul | 31 | 153 | 99 | 0 | | | 7 | 152 | 152 |
| | 14-Jul | 10 | | | 23 | 21 | 21 | 93 | | |
| | 15-Jul | 3 | | | 5 | | | 19 | | |
| | 16-Jul | 0 | | | 4 | 9 | 9 | 57 | | |
| | 17-Jul | 0 | | | 0 | | | 62 | | |
| | 18-Jul | 0 | | | 1 | | | 0 | 53 | 53 |
| | 19-Jul | 0 | | | 0 | | | 0 | | |
| | 20-Jul | 26 | 10 | 10 | 31 | | | 112 | 36 | 30 |
| | 21-Jul | 22 | 117 | 77 | 25 | 100 | 100 | 146 | 25 | 25 |
| | 22-Jul | 18 | | | 14 | | | 162 | | |
| | 23-Jul | 0 | | | 0 | | | 45 | | |
| | 24-Jul | 0 | | | 0 | | | 21 | | |
| | 25-Jul | 0 | | | 0 | | | 0 | | |
| | 26-Jul | 0 | | | 0 | | | 0 | | |
| | 27-Jul | 139 | 56 | 56 | 16 | | | 0 | | |
| | 28-Jul | 21 | 78 | 78 | 0 | 17 | 17 | 0 | | |
| | 29-Jul | 49 | 6 | 6 | 11 | 26 | 26 | 0 | | |
| | 30-Jul | 0 | | | 0 | | | 93 | 70 | 50 |
| | 31-Jul | 0 | | | 0 | | | 18 | | |
| | 1-Aug | 0 | | | 0 | | | 11 | | |
| | 2-Aug | 0 | | | 17 | 47 | 47 | 0 | | |
| | 3-Aug | 0 | | | 18 | 27 | 27 | 0 | | |
| | 4-Aug | 11 | | | 11 | 27 | 27 | 0 | | |
| | 5-Aug | 2 | | | 9 | 5 | 5 | 0 | | |
| Period Subtotal | | 422 | 475 | 379 | 229 | 282 | 282 | 1,431 | 453 | 379 |

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

# APPENDIX D: AGE AND LENGTH COMPOSITION OF COMMERCIAL FISHERY SAMPLES

Appendix D1.–Age composition estimates for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 975; *n* = 495) and 2 (July 6-August 5; Harvest = 846; *n* = 309) of the Northwest Kodiak/Afognak Districts (District 251, 253, 254), Kodiak Management Area, Westward Region, 2014. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | Number | Proportion | 5% | 95% | SE | Number | Proportion | 5% | 95% | SE |
| 0.1 | 5 | 0.01 | 0.00 | 0.02 | 0.004 | 40 | 0.13 | 0.10 | 0.16 | 0.019 |
| 0.2 | 163 | 0.33 | 0.29 | 0.37 | 0.021 | 117 | 0.38 | 0.33 | 0.43 | 0.028 |
| 0.3 | 190 | 0.38 | 0.35 | 0.42 | 0.022 | 76 | 0.25 | 0.20 | 0.29 | 0.025 |
| 0.4 | 8 | 0.02 | 0.01 | 0.03 | 0.006 | 8 | 0.03 | 0.01 | 0.04 | 0.009 |
| 0.5 | 0 | – | – | – | – | 1 | 0.00 | – | – | – |
| 1.1 | 8 | 0.02 | 0.01 | 0.03 | 0.006 | 10 | 0.03 | 0.01 | 0.05 | 0.010 |
| 1.2 | 71 | 0.14 | 0.12 | 0.17 | 0.016 | 37 | 0.12 | 0.09 | 0.15 | 0.018 |
| 1.3 | 42 | 0.08 | 0.06 | 0.11 | 0.013 | 18 | 0.06 | 0.03 | 0.08 | 0.013 |
| 1.4 | 4 | 0.01 | 0.00 | 0.02 | 0.004 | 2 | 0.01 | 0.00 | 0.02 | 0.005 |
| 1.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.1 | 2 | 0.00 | 0.00 | 0.01 | 0.003 | 0 | – | – | – | – |
| 2.2 | 2 | 0.00 | 0.00 | 0.01 | 0.003 | 0 | – | – | – | – |
| Total | 495 | 1.00 | | | | 309 | 1.00 | | | |

Appendix D2.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 975; *n* = 656) and 2 (July 6–August 5; Harvest = 846; *n* = 405) of the Northwest Kodiak/Afognak Districts (District 251, 253, 254), Kodiak Management Area, Westward Region, 2014. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 5 | 394 | 373 | 415 | 12.6 | 60.0 | 0.0 | 40 | 379 | 370 | 388 | 5.5 | 40.0 | 25.0 |
| 0.2 | 162 | 540 | 534 | 546 | 3.4 | 50.9 | 5.5 | 117 | 548 | 542 | 554 | 3.6 | 53.0 | 12.0 |
| 0.3 | 190 | 635 | 630 | 641 | 3.4 | 78.9 | 4.7 | 76 | 653 | 643 | 664 | 6.2 | 63.5 | 14.5 |
| 0.4 | 8 | 796 | 762 | 829 | 20.2 | 75.0 | 0.0 | 8 | 762 | 725 | 800 | 22.8 | 87.5 | 12.5 |
| 0.5 | 0 | – | – | – | – | – | – | 1 | 784 | – | – | – | 100.0 | 0.0 |
| 1.1 | 8 | 443 | 398 | 488 | 27.4 | 25.0 | 0.0 | 10 | 429 | 410 | 449 | 11.9 | 50.0 | 30.0 |
| 1.2 | 71 | 583 | 572 | 594 | 6.8 | 49.3 | 11.3 | 36 | 609 | 594 | 624 | 9.2 | 43.2 | 16.2 |
| 1.3 | 42 | 694 | 672 | 716 | 13.5 | 61.9 | 14.3 | 18 | 694 | 657 | 731 | 22.3 | 72.2 | 16.7 |
| 1.4 | 4 | 856 | 772 | 941 | 51.3 | 25.0 | 0.0 | 2 | 907 | 789 | 1024 | 71.5 | 0.0 | 0.0 |
| 1.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | 2 | 574 | 551 | 596 | 13.5 | 50.0 | 0.0 | 0 | – | – | – | – | – | – |
| 2.2 | 2 | 625 | 617 | 633 | 5.0 | 100.0 | 0.0 | 0 | – | – | – | – | – | – |
| Unknown | 162 | 580 | 568 | 591 | 7.1 | 64.8 | 11.1 | 97 | 494 | 471 | 517 | 14.0 | 44.2 | 16.5 |
| Total | 656 | 595 | 589 | 601 | 3.4 | 63.1 | 7.6 | 405 | 554 | 544 | 564 | 6.1 | 52.0 | 15.8 |

Appendix D3.–Age composition estimates for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,526; *n* = 485) and 2 (July 6–August 5; Harvest = 932; *n* = 363) of the Northwest Kodiak/Afognak Districts (District 251, 253, 254), Kodiak Management Area, Westward Region, 2015. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | 5 | 0.01 | 0.00 | 0.02 | 0.005 | 4 | 0.01 | 0.00 | 0.02 | 0.005 |
| 0.2 | 201 | 0.41 | 0.38 | 0.45 | 0.022 | 161 | 0.44 | 0.40 | 0.49 | 0.026 |
| 0.3 | 83 | 0.17 | 0.14 | 0.20 | 0.017 | 63 | 0.17 | 0.14 | 0.21 | 0.020 |
| 0.4 | 9 | 0.02 | 0.01 | 0.03 | 0.006 | 36 | 0.10 | 0.07 | 0.13 | 0.016 |
| 0.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 1.1 | 4 | 0.01 | 0.00 | 0.02 | 0.004 | 9 | 0.02 | 0.01 | 0.04 | 0.008 |
| 1.2 | 139 | 0.29 | 0.25 | 0.32 | 0.021 | 61 | 0.17 | 0.13 | 0.20 | 0.020 |
| 1.3 | 40 | 0.08 | 0.06 | 0.10 | 0.013 | 24 | 0.07 | 0.04 | 0.09 | 0.013 |
| 1.4 | 4 | 0.01 | 0.00 | 0.02 | 0.004 | 3 | 0.01 | 0.00 | 0.02 | 0.005 |
| 1.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.1 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.2 | 0 | – | – | – | – | 2 | 0.01 | 0.00 | 0.01 | 0.004 |
| Total | 485 | 1.00 | | | | 363 | 1.00 | | | |

Appendix D4.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,526; *n* = 567) and 2 (July 6–August 5; Harvest = 932; *n* = 410) of the Northwest Kodiak/Afognak Districts (District 251, 253, 254), Kodiak Management Area, Westward Region, 2015. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 5 | 339 | 297 | 381 | 25.5 | 20.0 | 0.0 | 4 | 369 | 342 | 395 | 16.4 | 20.0 | 0.0 |
| 0.2 | 201 | 556 | 551 | 561 | 3.1 | 45.7 | 13.9 | 161 | 566 | 560 | 573 | 3.7 | 62.1 | 16.8 |
| 0.3 | 83 | 673 | 660 | 687 | 8.4 | 74.3 | 15.7 | 63 | 707 | 690 | 725 | 10.7 | 59.1 | 20.6 |
| 0.4 | 9 | 775 | 743 | 806 | 19.0 | 66.7 | 11.1 | 36 | 819 | 806 | 832 | 7.9 | 66.7 | 0.0 |
| 0.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 1.1 | 4 | 429 | 411 | 447 | 11.1 | 25.0 | 25.0 | 9 | 452 | 425 | 478 | 16.0 | 0.0 | 0.0 |
| 1.2 | 139 | 587 | 579 | 594 | 4.5 | 28.5 | 13.7 | 61 | 603 | 591 | 615 | 7.1 | 43.1 | 27.9 |
| 1.3 | 40 | 730 | 712 | 748 | 10.9 | 71.1 | 12.5 | 24 | 716 | 685 | 747 | 18.8 | 57.1 | 20.8 |
| 1.4 | 4 | 807 | 766 | 849 | 25.1 | 100.0 | 25.0 | 3 | 794 | 662 | 926 | 80.0 | 100.0 | 66.7 |
| 1.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.2 | 0 | – | – | – | – | – | – | 2 | 588 | 527 | 648 | 36.5 | 50.0 | 0.0 |
| Unknown | 82 | 614 | 594 | 635 | 12.5 | 41.0 | 17.1 | 47 | 610 | 589 | 630 | 12.5 | 55.4 | 29.8 |
| Total | 567 | 604 | 597 | 610 | 3.9 | 46.8 | 14.5 | 410 | 627 | 618 | 636 | 5.4 | 56.0 | 19.0 |

Appendix D5.–Age composition estimates for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,004; *n* = 502) and 2 (July 6–August 5; Harvest = 1,094; *n* = 393) of the Northwest Kodiak/Afognak Districts (District 251, 253, 254), Kodiak Management Area, Westward Region, 2016. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | 2 | 0.00 | 0.00 | 0.01 | 0.003 | 14 | 0.04 | 0.02 | 0.05 | 0.009 |
| 0.2 | 155 | 0.31 | 0.27 | 0.34 | 0.021 | 136 | 0.35 | 0.31 | 0.39 | 0.024 |
| 0.3 | 157 | 0.31 | 0.28 | 0.35 | 0.021 | 93 | 0.24 | 0.20 | 0.27 | 0.021 |
| 0.4 | 3 | 0.01 | 0.00 | 0.01 | 0.003 | 5 | 0.01 | 0.00 | 0.02 | 0.006 |
| 0.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 1.1 | 5 | 0.01 | 0.00 | 0.02 | 0.004 | 8 | 0.02 | 0.01 | 0.03 | 0.007 |
| 1.2 | 97 | 0.19 | 0.16 | 0.22 | 0.018 | 96 | 0.24 | 0.21 | 0.28 | 0.022 |
| 1.3 | 79 | 0.16 | 0.13 | 0.19 | 0.016 | 39 | 0.10 | 0.07 | 0.13 | 0.015 |
| 1.4 | 4 | 0.01 | 0.00 | 0.02 | 0.004 | 1 | 0.00 | – | – | – |
| 1.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.1 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.2 | 0 | – | – | – | – | 1 | 0.00 | – | – | – |
| Total | 502 | 1.00 | | | | 393 | 1.00 | | | |

Appendix D6.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,004; *n* = 585) and 2 (July 6–August 5; Harvest = 1,094; *n* = 454) of the Northwest Kodiak/Afognak Districts (District 251, 253, 254), Kodiak Management Area, Westward Region, 2016. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 2 | 355 | 353 | 357 | 1.0 | 50.0 | 0.0 | 14 | 371 | 362 | 381 | 5.8 | 64.3 | 14.3 |
| 0.2 | 155 | 522 | 517 | 528 | 3.2 | 62.2 | 9.0 | 136 | 535 | 529 | 541 | 3.6 | 39.7 | 5.9 |
| 0.3 | 157 | 617 | 610 | 625 | 4.7 | 26.7 | 7.0 | 93 | 629 | 619 | 639 | 6.0 | 62.0 | 10.8 |
| 0.4 | 3 | 871 | 803 | 938 | 41.1 | 33.3 | 33.3 | 5 | 735 | 665 | 805 | 42.2 | 80.0 | 20.0 |
| 0.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 1.1 | 5 | 417 | 380 | 454 | 22.5 | 75.0 | 0.0 | 8 | 391 | 360 | 423 | 19.0 | 75.0 | 12.5 |
| 1.2 | 97 | 564 | 555 | 574 | 6.0 | 54.9 | 14.4 | 96 | 589 | 580 | 599 | 6.0 | 40.6 | 16.7 |
| 1.3 | 79 | 688 | 670 | 705 | 10.4 | 34.2 | 10.1 | 39 | 719 | 687 | 752 | 19.7 | 71.1 | 5.1 |
| 1.4 | 4 | 916 | 882 | 950 | 20.9 | 25.0 | 0.0 | 1 | 854 | – | – | – | 100.0 | - |
| 1.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.2 | 0 | – | – | – | – | – | – | 1 | 767 | – | – | – | - | 0.0 |
| Unknown | 83 | 611 | 595 | 627 | 9.9 | 50.0 | 10.8 | 61 | 594 | 570 | 618 | 14.6 | 61.7 | 9.8 |
| Total | 585 | 593 | 586 | 599 | 3.9 | 45.6 | 9.7 | 454 | 585 | 577 | 593 | 4.8 | 51.9 | 10.1 |

Appendix D7.–Age composition estimates for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 414; *n* = 243) and 2 (July 6–August 5; Harvest = 1,280; *n* = 310) of the Southwest Kodiak/Alitak Districts (District 255, 256, 257), Kodiak Management Area, Westward Region, 2014. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | 9 | 0.04 | 0.01 | 0.06 | 0.012 | 30 | 0.10 | 0.07 | 0.13 | 0.017 |
| 0.2 | 151 | 0.62 | 0.57 | 0.67 | 0.031 | 147 | 0.47 | 0.43 | 0.52 | 0.028 |
| 0.3 | 44 | 0.18 | 0.14 | 0.22 | 0.025 | 87 | 0.28 | 0.24 | 0.32 | 0.026 |
| 0.4 | 1 | 0.00 | – | – | – | 7 | 0.02 | 0.01 | 0.04 | 0.008 |
| 0.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 1.1 | 9 | 0.04 | 0.01 | 0.06 | 0.012 | 8 | 0.03 | 0.01 | 0.04 | 0.009 |
| 1.2 | 25 | 0.10 | 0.07 | 0.14 | 0.020 | 12 | 0.04 | 0.02 | 0.06 | 0.011 |
| 1.3 | 3 | 0.01 | 0.00 | 0.03 | 0.007 | 19 | 0.06 | 0.04 | 0.09 | 0.014 |
| 1.4 | 0 | – | – | – | – | 0 | – | – | – | – |
| 1.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.1 | 1 | 0.00 | – | – | – | 0 | – | – | – | – |
| 2.2 | 0 | – | – | – | – | 0 | – | – | – | – |
| Total | 243 | 1.00 | | | | 310 | 1.00 | | | |

Appendix D8.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 414; *n* = 287) and 2 (July 6–August 5; Harvest = 1,280; *n* = 426) of the Southwest Kodiak/Alitak Districts (District 255, 256, 257), Kodiak Management Area, Westward Region, 2014. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 9 | 370 | 352 | 388 | 10.8 | 11.1 | 22.2 | 30 | 375 | 363 | 387 | 7.2 | 43.3 | 16.7 |
| 0.2 | 151 | 522 | 517 | 528 | 3.4 | 49.7 | 10.6 | 147 | 542 | 536 | 547 | 3.2 | 43.2 | 14.3 |
| 0.3 | 44 | 631 | 617 | 646 | 8.9 | 47.7 | 9.1 | 87 | 711 | 697 | 726 | 8.9 | 58.6 | 13.8 |
| 0.4 | 1 | 676 | – | – | – | 100.0 | 0.0 | 7 | 836 | 802 | 869 | 20.4 | 85.7 | 0.0 |
| 0.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 1.1 | 9 | 417 | 400 | 434 | 10.5 | 33.3 | 11.1 | 8 | 451 | 403 | 499 | 29.0 | 12.5 | 12.5 |
| 1.2 | 25 | 570 | 554 | 585 | 9.2 | 44.0 | 20.0 | 12 | 592 | 551 | 634 | 25.2 | 83.3 | 41.7 |
| 1.3 | 3 | 693 | 633 | 752 | 35.9 | 66.7 | 0.0 | 19 | 770 | 736 | 804 | 20.7 | 57.9 | 21.1 |
| 1.4 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 1.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | 1 | 620 | – | – | – | 100.00 | – | 0 | – | – | – | – | – | – |
| 2.2 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| Unknown | 44 | 541 | 521 | 562 | 12.7 | 50.0 | 9.1 | 116 | 499 | 477 | 521 | 13.5 | 41.4 | 14.7 |
| Total | 287 | 541 | 533 | 548 | 4.6 | 47.7 | 11.1 | 426 | 568 | 556 | 579 | 6.9 | 47.8 | 15.3 |

Appendix D9.–Age composition estimates for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 511; *n* = 260) and 2 (July 6–August 5; Harvest = 2,042; *n* = 431) of the Southwest Kodiak/Alitak Districts (District 255, 256, 257), Kodiak Management Area, Westward Region, 2015. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | 44 | 0.17 | 0.13 | 0.21 | 0.023 | 10 | 0.02 | 0.01 | 0.04 | 0.007 |
| 0.2 | 108 | 0.42 | 0.36 | 0.47 | 0.031 | 181 | 0.42 | 0.38 | 0.46 | 0.024 |
| 0.3 | 39 | 0.15 | 0.11 | 0.19 | 0.022 | 101 | 0.23 | 0.20 | 0.27 | 0.020 |
| 0.4 | 3 | 0.01 | 0.00 | 0.02 | 0.007 | 50 | 0.12 | 0.09 | 0.14 | 0.015 |
| 0.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 1.1 | 16 | 0.06 | 0.03 | 0.09 | 0.015 | 2 | 0.00 | 0.00 | 0.01 | 0.003 |
| 1.2 | 42 | 0.16 | 0.12 | 0.20 | 0.023 | 64 | 0.15 | 0.12 | 0.18 | 0.017 |
| 1.3 | 6 | 0.02 | 0.01 | 0.04 | 0.009 | 17 | 0.04 | 0.02 | 0.06 | 0.009 |
| 1.4 | 2 | 0.01 | 0.00 | 0.02 | 0.005 | 6 | 0.01 | 0.00 | 0.02 | 0.006 |
| 1.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.1 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.2 | 0 | – | – | – | – | 0 | – | – | – | – |
| Total | 260 | 1.00 | | | | 431 | 1.00 | | | |

Appendix D10.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 511; *n* = 306) and 2 (July 6–August 5; Harvest = 2,042; *n* = 496) of the Southwest Kodiak/Alitak Districts (District 255, 256, 257), Kodiak Management Area, Westward Region, 2015. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 44 | 362 | 349 | 374 | 7.4 | 5.0 | 4.5 | 10 | 361 | 344 | 379 | 10.6 | - | 30.0 |
| 0.2 | 108 | 536 | 528 | 544 | 4.7 | 42.9 | 13.0 | 181 | 576 | 569 | 583 | 4.2 | 65.2 | 11.6 |
| 0.3 | 39 | 648 | 632 | 663 | 9.4 | 58.1 | 23.1 | 101 | 707 | 694 | 720 | 7.7 | 78.9 | 14.9 |
| 0.4 | 2 | 744 | 716 | 771 | 16.5 | 100.0 | 0.0 | 50 | 797 | 782 | 812 | 8.9 | 85.7 | 2.0 |
| 0.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 1.1 | 16 | 375 | 360 | 390 | 8.9 | 0.0 | 6.3 | 2 | 396 | 323 | 469 | 44.0 | 100.0 | 0.0 |
| 1.2 | 42 | 595 | 581 | 610 | 8.9 | 28.1 | 14.3 | 64 | 618 | 607 | 629 | 6.9 | 37.0 | 23.4 |
| 1.3 | 6 | 697 | 648 | 745 | 29.2 | 83.3 | 16.7 | 17 | 708 | 680 | 736 | 17.0 | 77.8 | 29.4 |
| 1.4 | 2 | 792 | 787 | 796 | 2.5 | 100.0 | 0.0 | 6 | 824 | 776 | 872 | 29.1 | 60.0 | - |
| 1.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.2 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| Unknown | 47 | 524 | 496 | 552 | 16.9 | 33.3 | 31.9 | 65 | 637 | 611 | 663 | 15.8 | 63.2 | 23.1 |
| Total | 306 | 529 | 518 | 540 | 6.6 | 35.2 | 15.6 | 496 | 641 | 632 | 649 | 5.1 | 68.6 | 15.1 |

Appendix D11.–Age composition estimates for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 347; *n* = 265) and 2 (July 6–August 5; Harvest = 427; *n* = 261) of the Southwest Kodiak/Alitak Districts (District 255, 256, 257), Kodiak Management Area, Westward Region, 2016. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | 10 | 0.04 | 0.02 | 0.06 | 0.012 | 13 | 0.05 | 0.03 | 0.07 | 0.013 |
| 0.2 | 144 | 0.54 | 0.49 | 0.60 | 0.031 | 88 | 0.34 | 0.29 | 0.39 | 0.029 |
| 0.3 | 61 | 0.23 | 0.19 | 0.27 | 0.026 | 95 | 0.36 | 0.31 | 0.42 | 0.030 |
| 0.4 | 1 | 0.00 | – | – | – | 3 | 0.01 | 0.00 | 0.02 | 0.007 |
| 0.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 1.1 | 4 | 0.02 | 0.00 | 0.03 | 0.008 | 3 | 0.01 | 0.00 | 0.02 | 0.007 |
| 1.2 | 36 | 0.14 | 0.10 | 0.17 | 0.021 | 37 | 0.14 | 0.10 | 0.18 | 0.022 |
| 1.3 | 9 | 0.03 | 0.01 | 0.05 | 0.011 | 22 | 0.08 | 0.05 | 0.11 | 0.017 |
| 1.4 | 0 | – | – | – | – | 0 | – | – | – | – |
| 1.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.1 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.2 | 0 | – | – | – | – | 0 | – | – | – | – |
| Total | 265 | 1.00 | | | | 261 | 1.00 | | | |

Appendix D12.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 347; *n* = 310) and 2 (July 6–August 5; Harvest = 427; *n* = 299) of the Southwest Kodiak/Alitak Districts (District 255, 256, 257), Kodiak Management Area, Westward Region, 2016. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 10 | 396 | 377 | 415 | 11.4 | 44.4 | 20.0 | 12 | 386 | 369 | 404 | 10.6 | 53.8 | 23.1 |
| 0.2 | 144 | 502 | 495 | 510 | 4.4 | 47.6 | 16.0 | 88 | 542 | 534 | 551 | 5.3 | 49.3 | 13.6 |
| 0.3 | 61 | 624 | 609 | 639 | 8.8 | 65.7 | 16.4 | 95 | 688 | 677 | 699 | 6.7 | 69.8 | 22.1 |
| 0.4 | 1 | 675 | – | – | – | – | 0.0 | 3 | 772 | 710 | 834 | 37.8 | – | 0.0 |
| 0.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 1.1 | 4 | 404 | 380 | 428 | 14.6 | 25.0 | 0.0 | 3 | 421 | 376 | 465 | 27.2 | 33.3 | 33.3 |
| 1.2 | 36 | 566 | 547 | 585 | 11.6 | 43.3 | 16.7 | 37 | 628 | 610 | 645 | 10.5 | 47.4 | 27.0 |
| 1.3 | 9 | 630 | 590 | 671 | 24.5 | 62.5 | 0.0 | 22 | 717 | 692 | 742 | 15.2 | 80.0 | 13.6 |
| 1.4 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 1.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.2 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| Unknown | 45 | 554 | 525 | 584 | 17.9 | 56.3 | 15.6 | 39 | 655 | 631 | 679 | 14.7 | 60.0 | 28.2 |
| Total | 310 | 541 | 532 | 549 | 5.2 | 50.8 | 15.5 | 299 | 621 | 611 | 632 | 6.1 | 57.1 | 20.3 |

Appendix D13.–Age composition estimates for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 377; *n* = 246) and 2 (July 6–August 5; Harvest = 2,553; *n* = 413) of the Eastside Kodiak/Afognak Districts (District 258, 259, 252), Kodiak Management Area, Westward Region, 2014. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | 34 | 0.14 | 0.10 | 0.18 | 0.022 | 85 | 0.21 | 0.17 | 0.24 | 0.020 |
| 0.2 | 108 | 0.44 | 0.38 | 0.49 | 0.032 | 137 | 0.33 | 0.29 | 0.37 | 0.023 |
| 0.3 | 47 | 0.19 | 0.15 | 0.23 | 0.025 | 72 | 0.17 | 0.14 | 0.21 | 0.019 |
| 0.4 | 2 | 0.01 | 0.00 | 0.02 | 0.006 | 6 | 0.01 | 0.00 | 0.03 | 0.006 |
| 0.5 | 1 | 0.00 | – | – | – | 0 | – | – | – | – |
| 1.1 | 16 | 0.07 | 0.04 | 0.09 | 0.016 | 42 | 0.10 | 0.08 | 0.13 | 0.015 |
| 1.2 | 32 | 0.13 | 0.09 | 0.17 | 0.021 | 61 | 0.15 | 0.12 | 0.18 | 0.017 |
| 1.3 | 6 | 0.02 | 0.01 | 0.04 | 0.010 | 9 | 0.02 | 0.01 | 0.03 | 0.007 |
| 1.4 | 0 | – | – | – | – | 1 | 0.00 | – | – | – |
| 1.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.1 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.2 | 0 | – | – | – | – | 0 | – | – | – | – |
| Total | 246 | 1.00 | | | | 413 | 1.00 | | | |

Appendix D14.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 377; *n* = 294) and 2 (July 6–August 5; Harvest = 2,553; *n* = 506) of the Eastside Kodiak/Afognak Districts (District 258, 259, 252), Kodiak Management Area, Westward Region, 2014. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 33 | 368 | 358 | 378 | 6.3 | 24.2 | 14.7 | 85 | 377 | 370 | 384 | 4.3 | 42.4 | 9.4 |
| 0.2 | 108 | 520 | 513 | 527 | 4.3 | 47.2 | 16.7 | 137 | 543 | 535 | 551 | 4.8 | 50.7 | 17.5 |
| 0.3 | 47 | 654 | 640 | 669 | 8.7 | 72.1 | 12.8 | 72 | 662 | 653 | 671 | 5.6 | 60.6 | 9.7 |
| 0.4 | 2 | 755 | 717 | 793 | 23.0 | 50.0 | 0.0 | 6 | 762 | 709 | 814 | 31.6 | 60.0 | 0.0 |
| 0.5 | 1 | 1053 | – | – | – | - | - | 0 | – | – | – | – | – | – |
| 1.1 | 16 | 433 | 414 | 452 | 11.6 | 43.8 | 31.3 | 42 | 428 | 417 | 439 | 6.6 | 53.7 | 11.9 |
| 1.2 | 32 | 629 | 614 | 643 | 8.5 | 50.0 | 9.4 | 61 | 609 | 596 | 623 | 8.3 | 51.7 | 11.5 |
| 1.3 | 6 | 709 | 650 | 768 | 35.9 | 66.7 | 50.0 | 9 | 689 | 662 | 716 | 16.4 | 62.5 | 11.1 |
| 1.4 | 0 | – | – | – | – | – | – | 1 | 925 | – | – | – | 100.0 | - |
| 1.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.2 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| Unknown | 49 | 519 | 494 | 543 | 15.1 | 42.9 | 28.6 | 93 | 541 | | | 10.2 | 45.7 | 35.5 |
| Total | 294 | 539 | 528 | 549 | 6.6 | 48.3 | 18.3 | 506 | 536 | 528 | 545 | 5.2 | 50.5 | 16.8 |

Appendix D15.–Age composition estimates for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,400; *n* = 358) and 2 (July 6–August 5; Harvest = 807; *n* = 237) of the Eastside Kodiak/Afognak Districts (District 258, 259, 252), Kodiak Management Area, Westward Region, 2015. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 90% CI | | | | | 90% CI | | |
| Age Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | 45 | 0.13 | 0.10 | 0.16 | 0.018 | 26 | 0.11 | 0.07 | 0.15 | 0.020 |
| 0.2 | 135 | 0.38 | 0.33 | 0.42 | 0.026 | 98 | 0.41 | 0.36 | 0.47 | 0.032 |
| 0.3 | 28 | 0.08 | 0.05 | 0.10 | 0.014 | 26 | 0.11 | 0.07 | 0.15 | 0.020 |
| 0.4 | 3 | 0.01 | 0.00 | 0.02 | 0.005 | 11 | 0.05 | 0.02 | 0.07 | 0.014 |
| 0.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 1.1 | 41 | 0.11 | 0.09 | 0.14 | 0.017 | 19 | 0.08 | 0.05 | 0.11 | 0.018 |
| 1.2 | 88 | 0.25 | 0.21 | 0.28 | 0.023 | 42 | 0.18 | 0.13 | 0.22 | 0.025 |
| 1.3 | 17 | 0.05 | 0.03 | 0.07 | 0.011 | 12 | 0.05 | 0.02 | 0.08 | 0.014 |
| 1.4 | 1 | 0.00 | – | – | – | 2 | 0.01 | 0.00 | 0.02 | 0.006 |
| 1.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.1 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.2 | 0 | – | – | – | – | 1 | 0.00 | – | – | – |
| Total | 358 | 1.00 | | | | 237 | 1.00 | | | |

Appendix D16.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,400; $n$ = 434) and 2 (July 6–August 5; Harvest = 807; $n$ = 284) of the Eastside Kodiak/Afognak Districts (District 258, 259, 252), Kodiak Management Area, Westward Region, 2015. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 45 | 344 | 337 | 351 | 4.3 | 86.7 | 26.7 | 26 | 356 | 349 | 364 | 4.6 | 71.4 | 15.4 |
| 0.2 | 135 | 504 | 498 | 510 | 3.7 | 83.7 | 15.6 | 98 | 539 | 530 | 548 | 5.3 | 75.0 | 25.5 |
| 0.3 | 28 | 640 | 619 | 660 | 12.3 | 72.7 | 32.1 | 26 | 695 | 670 | 719 | 14.9 | 76.2 | 15.4 |
| 0.4 | 3 | 783 | 728 | 838 | 33.4 | 100.0 | 0.0 | 11 | 824 | 788 | 861 | 22.0 | 60.0 | 0.0 |
| 0.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 1.1 | 41 | 413 | 398 | 429 | 9.4 | 56.7 | 9.8 | 19 | 423 | 407 | 439 | 9.9 | 35.7 | 26.3 |
| 1.2 | 88 | 539 | 526 | 551 | 7.6 | 72.6 | 30.7 | 42 | 576 | 561 | 592 | 9.5 | 65.5 | 28.6 |
| 1.3 | 17 | 769 | 729 | 809 | 24.2 | 69.2 | 0.0 | 11 | 789 | 754 | 825 | 21.7 | 20.0 | 25.0 |
| 1.4 | 1 | 1005 | – | – | – | – | 0.0 | 2 | 865 | 776 | 953 | 53.5 | 100.0 | - |
| 1.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.2 | 0 | – | – | – | – | – | – | 1 | 525 | – | – | – | 100.0 | 0.0 |
| Unknown | 76 | 443 | 420 | 466 | 13.9 | 77.3 | 17.1 | 48 | 487 | 447 | 527 | 24.2 | 86.2 | 35.5 |
| Total | 434 | 497 | 488 | 507 | 5.8 | 76.6 | 19.8 | 284 | 549 | 535 | 563 | 8.5 | 69.2 | 22.5 |

Appendix D17.–Age composition estimates for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 446; *n* = 280) and 2 (July 6–August 5; Harvest = 779; *n* = 280) of the Eastside Kodiak/Afognak Districts (District 258, 259, 252), Kodiak Management Area, Westward Region, 2016. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | 150 | 0.54 | 0.48 | 0.59 | 0.030 | 53 | 0.19 | 0.15 | 0.23 | 0.023 |
| 0.2 | 43 | 0.15 | 0.12 | 0.19 | 0.022 | 82 | 0.29 | 0.25 | 0.34 | 0.027 |
| 0.3 | 18 | 0.06 | 0.04 | 0.09 | 0.015 | 83 | 0.30 | 0.25 | 0.34 | 0.027 |
| 0.4 | 1 | 0.00 | – | – | – | 3 | 0.01 | 0.00 | 0.02 | 0.006 |
| 0.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 1.1 | 42 | 0.15 | 0.11 | 0.19 | 0.021 | 11 | 0.04 | 0.02 | 0.06 | 0.012 |
| 1.2 | 11 | 0.04 | 0.02 | 0.06 | 0.012 | 28 | 0.10 | 0.07 | 0.13 | 0.018 |
| 1.3 | 13 | 0.05 | 0.02 | 0.07 | 0.013 | 18 | 0.06 | 0.04 | 0.09 | 0.015 |
| 1.4 | 2 | 0.01 | 0.00 | 0.02 | 0.005 | 2 | 0.01 | 0.00 | 0.02 | 0.005 |
| 1.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.1 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.2 | 0 | – | – | – | – | 0 | – | – | – | – |
| Total | 280 | 1.00 | | | | 280 | 1.00 | | | |

Appendix D18.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 446; *n* = 315) and 2 (July 6–August 5; Harvest = 779; *n* = 322) of the Eastside Kodiak/Afognak Districts (District 258, 259, 252), Kodiak Management Area, Westward Region, 2016. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 149 | 366 | 362 | 370 | 2.3 | 52.0 | 16.7 | 53 | 376 | 367 | 385 | 5.5 | 56.6 | 15.1 |
| 0.2 | 43 | 473 | 463 | 482 | 6.0 | 55.8 | 37.2 | 82 | 528 | 520 | 536 | 5.0 | 56.3 | 31.7 |
| 0.3 | 18 | 636 | 602 | 669 | 20.5 | 69.2 | 5.6 | 83 | 652 | 641 | 663 | 6.7 | 69.5 | 15.5 |
| 0.4 | 1 | 790 | – | – | – | – | 0.0 | 3 | 964 | 773 | 1,155 | 115.8 | 100.0 | 0.0 |
| 0.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 1.1 | 42 | 418 | 409 | 428 | 5.8 | 38.1 | 16.7 | 11 | 450 | 434 | 467 | 9.9 | 45.5 | 9.1 |
| 1.2 | 11 | 608 | 569 | 648 | 23.9 | 55.6 | 9.1 | 28 | 610 | 588 | 632 | 13.4 | 50.0 | 14.3 |
| 1.3 | 13 | 725 | 683 | 767 | 25.5 | 80.0 | 15.4 | 18 | 729 | 691 | 766 | 22.8 | 33.3 | 16.7 |
| 1.4 | 2 | 892 | 838 | 946 | 33.0 | 0.0 | 0.0 | 2 | 918 | 781 | 1,055 | 83.0 | 100.0 | - |
| 1.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.2 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| Unknown | 36 | 500 | 457 | 544 | 26.4 | 65.6 | 22.2 | 42 | 597 | 559 | 634 | 22.9 | 60.0 | 35.7 |
| Total | 315 | 446 | 435 | 458 | 7.1 | 53.2 | 19.0 | 322 | 566 | 553 | 579 | 7.6 | 58.4 | 21.7 |

Appendix D19.–Age composition estimates for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 442; *n* = 396) of the Mainland District (District 262), Kodiak Management Area, Westward Region, 2014. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | – | – | – | – | – | 97 | 0.24 | 0.21 | 0.28 | 0.022 |
| 0.2 | – | – | – | – | – | 115 | 0.29 | 0.25 | 0.33 | 0.023 |
| 0.3 | – | – | – | – | – | 110 | 0.28 | 0.24 | 0.32 | 0.023 |
| 0.4 | – | – | – | – | – | 4 | 0.01 | 0.00 | 0.02 | 0.005 |
| 0.5 | – | – | – | – | – | 1 | 0.00 | – | – | – |
| 1.1 | – | – | – | – | – | 22 | 0.06 | 0.04 | 0.08 | 0.012 |
| 1.2 | – | – | – | – | – | 26 | 0.07 | 0.04 | 0.09 | 0.012 |
| 1.3 | – | – | – | – | – | 18 | 0.05 | 0.03 | 0.06 | 0.010 |
| 1.4 | – | – | – | – | – | 3 | 0.01 | 0.00 | 0.02 | 0.004 |
| 1.5 | – | – | – | – | – | 0 | – | – | – | – |
| 2.1 | – | – | – | – | – | 0 | – | – | – | – |
| 2.2 | – | – | – | – | – | 0 | – | – | – | – |
| Total | – | – | | | | 396 | 1.00 | | | |

Appendix D20.–Length, sex, and adipose clip composition estimates by age for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 442; *n* = 474) of the Mainland District (District 262), Kodiak Management Area, Westward Region, 2014. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90 % CI | | | % | % | | | 90 % CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | – | – | – | – | – | – | – | 96 | 374 | 368 | 380 | 3.4 | 28.6 | 15.5 |
| 0.2 | – | – | – | – | – | – | – | 115 | 526 | 516 | 535 | 5.7 | 63.2 | 26.1 |
| 0.3 | – | – | – | – | – | – | – | 110 | 693 | 683 | 702 | 5.6 | 68.5 | 15.5 |
| 0.4 | – | – | – | – | – | – | – | 4 | 827 | 787 | 866 | 24.2 | 100.0 | 0.0 |
| 0.5 | – | – | – | – | – | – | – | 1 | 971 | – | – | – | – | – |
| 1.1 | – | – | – | – | – | – | – | 22 | 413 | 399 | 427 | 8.5 | 50.0 | 9.1 |
| 1.2 | – | – | – | – | – | – | – | 26 | 599 | 577 | 620 | 13.0 | 48.0 | - |
| 1.3 | – | – | – | – | – | – | – | 17 | 696 | 663 | 729 | 19.9 | 75.0 | 11.1 |
| 1.4 | – | – | – | – | – | – | – | 3 | 867 | 767 | 967 | 60.5 | 33.3 | – |
| 1.5 | – | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | – | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.2 | – | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| Unknown | – | – | – | – | – | – | – | 80 | 519 | 494 | 545 | 15.3 | 52.9 | 26.3 |
| Total | – | – | – | – | – | – | – | 474 | 543 | 532 | 554 | 6.5 | 52.1 | 18.3 |

Appendix D21.–Age composition estimates for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 229; *n* = 252) of the Mainland District (District 262), Kodiak Management Area, Westward Region, 2015. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | – | – | – | – | – | 28 | 0.11 | 0.08 | 0.15 | 0.020 |
| 0.2 | – | – | – | – | – | 107 | 0.42 | 0.37 | 0.48 | 0.031 |
| 0.3 | – | – | – | – | – | 37 | 0.15 | 0.11 | 0.19 | 0.022 |
| 0.4 | – | – | – | – | – | 12 | 0.05 | 0.02 | 0.07 | 0.013 |
| 0.5 | – | – | – | – | – | 1 | 0.00 | – | – | – |
| 1.1 | – | – | – | – | – | 4 | 0.02 | 0.00 | 0.03 | 0.008 |
| 1.2 | – | – | – | – | – | 41 | 0.16 | 0.12 | 0.20 | 0.023 |
| 1.3 | – | – | – | – | – | 9 | 0.04 | 0.01 | 0.06 | 0.012 |
| 1.4 | – | – | – | – | – | 13 | 0.05 | 0.03 | 0.08 | 0.014 |
| 1.5 | – | – | – | – | – | 0 | – | – | – | – |
| 2.1 | – | – | – | – | – | 0 | – | – | – | – |
| 2.2 | – | – | – | – | – | 0 | – | – | – | – |
| Total | – | – | | | | 252 | 1.00 | | | |

Appendix D22.–Length, sex, and adipose clip composition estimates by age for temporal stratum 2 ("Late"; July 6–August 5; Harvest = 229; *n* = 282) of the Mainland District (District 262), Kodiak Management Area, Westward Region, 2015. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | – | – | – | – | – | – | – | 28 | 366 | 358 | 375 | 5.2 | 100.0 | 14.3 |
| 0.2 | – | – | – | – | – | – | – | 107 | 560 | 551 | 569 | 5.5 | 66.2 | 10.3 |
| 0.3 | – | – | – | – | – | – | – | 37 | 728 | 709 | 747 | 11.5 | 61.5 | 10.8 |
| 0.4 | – | – | – | – | – | – | – | 12 | 816 | 785 | 847 | 18.6 | 62.5 | 0.0 |
| 0.5 | – | – | – | – | – | – | – | 1 | 1,006 | – | – | – | – | – |
| 1.1 | – | – | – | – | – | – | – | 4 | 427 | 359 | 494 | 41.0 | 0.0 | 0.0 |
| 1.2 | – | – | – | – | – | – | – | 41 | 585 | 569 | 602 | 9.9 | 43.3 | 14.6 |
| 1.3 | – | – | – | – | – | – | – | 9 | 778 | 714 | 843 | 39.0 | 28.6 | – |
| 1.4 | – | – | – | – | – | – | – | 13 | 891 | 862 | 920 | 17.6 | 44.4 | – |
| 1.5 | – | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | – | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.2 | – | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| Unknown | – | – | – | – | – | – | – | 30 | 545 | 507 | 584 | 23.2 | 84.6 | 23.3 |
| Total | – | – | – | – | – | – | – | 282 | 598 | 583 | 612 | 8.7 | 60.3 | 11.3 |

Appendix D23.–Age composition estimates for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,263; *n* = 382) and 2 (July 6–August 5; Harvest = 1,431; *n* = 392) of the Mainland District (District 262), Kodiak Management Area, Westward Region, 2016. Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| | Early | | | | | Late | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | | | 90% CI | | | | | 90% CI | | |
| Class | No. | Proportion | 5% | 95% | SE | No. | Proportion | 5% | 95% | SE |
| 0.1 | 52 | 0.14 | 0.11 | 0.17 | 0.018 | 31 | 0.08 | 0.06 | 0.10 | 0.014 |
| 0.2 | 167 | 0.44 | 0.39 | 0.48 | 0.025 | 142 | 0.36 | 0.32 | 0.40 | 0.024 |
| 0.3 | 98 | 0.26 | 0.22 | 0.29 | 0.022 | 159 | 0.41 | 0.36 | 0.45 | 0.025 |
| 0.4 | 4 | 0.01 | 0.00 | 0.02 | 0.005 | 2 | 0.01 | 0.00 | 0.01 | 0.004 |
| 0.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 1.1 | 10 | 0.03 | 0.01 | 0.04 | 0.008 | 3 | 0.01 | 0.00 | 0.02 | 0.004 |
| 1.2 | 36 | 0.09 | 0.07 | 0.12 | 0.015 | 35 | 0.09 | 0.06 | 0.11 | 0.014 |
| 1.3 | 14 | 0.04 | 0.02 | 0.05 | 0.010 | 15 | 0.04 | 0.02 | 0.06 | 0.010 |
| 1.4 | 0 | – | – | – | – | 5 | 0.01 | 0.00 | 0.02 | 0.006 |
| 1.5 | 0 | – | – | – | – | 0 | – | – | – | – |
| 2.1 | 1 | 0.00 | – | – | – | 0 | – | – | – | – |
| 2.2 | 0 | – | – | – | – | 0 | – | – | – | – |
| Total | 382 | 1.00 | | | | 392 | 1.00 | | | |

Appendix D24.–Length, sex, and adipose clip composition estimates by age for temporal stratum 1 ("Early"; June 1–July 5; Harvest = 1,263; $n$ = 462) and 2 (July 6–August 5; Harvest = 1,431; $n$ = 454) of the Mainland District (District 262), Kodiak Management Area, Westward Region, 2016. Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| | Early | | | | | | | Late | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Length (mm) METF | | | | | | | Length (mm) METF | | | | | |
| Age | | | 90% CI | | | % | % | | | 90% CI | | | % | % |
| Class | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip | No. | Mean | 0.05 | 0.95 | SE | Female | Ad. Clip |
| 0.1 | 52 | 359 | 351 | 367 | 4.7 | 45.8 | 11.5 | 31 | 385 | 376 | 395 | 5.8 | 38.7 | 12.9 |
| 0.2 | 167 | 475 | 470 | 480 | 3.1 | 54.9 | 29.3 | 142 | 529 | 523 | 536 | 4.0 | 51.1 | 10.6 |
| 0.3 | 98 | 634 | 624 | 645 | 6.2 | 72.4 | 18.4 | 159 | 642 | 634 | 650 | 4.8 | 61.4 | 15.7 |
| 0.4 | 4 | 742 | 720 | 764 | 13.4 | 75.0 | 25.0 | 2 | 813 | 712 | 914 | 61.0 | 100.0 | 0.0 |
| 0.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 1.1 | 10 | 417 | 404 | 431 | 8.4 | 40.0 | 20.0 | 3 | 426 | 379 | 472 | 28.4 | 0.0 | 33.3 |
| 1.2 | 36 | 595 | 574 | 617 | 13.0 | 63.0 | 25.0 | 35 | 587 | 573 | 602 | 8.6 | 53.3 | 28.6 |
| 1.3 | 14 | 687 | 651 | 724 | 22.1 | 80.0 | 14.3 | 15 | 712 | 669 | 756 | 26.4 | 42.9 | 26.7 |
| 1.4 | 0 | – | – | – | – | – | – | 5 | 899 | 844 | 954 | 33.3 | 50.0 | – |
| 1.5 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.1 | 1 | 588 | – | – | – | – | – | 0 | – | – | – | – | – | – |
| 2.2 | 0 | – | – | – | – | – | – | 0 | – | – | – | – | – | – |
| Unknown | 80 | 527 | 504 | 549 | 13.7 | 54.8 | 20.0 | 62 | 581 | 559 | 603 | 13.5 | 51.9 | 16.1 |
| Total | 462 | 522 | 513 | 531 | 5.3 | 58.3 | 22.3 | 454 | 581 | 573 | 589 | 4.9 | 53.5 | 15.2 |

# APPENDIX E: AGE AND LENGTH COMPOSITION OF SPORT FISHERY SAMPLES

Appendix E1.–Age composition estimates for Chinook salmon sport harvest, Kodiak Regulatory Area, 2014 (April 16–August 29; Harvest = 8,049; *n* = 323). Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| Age Class | Number | Proportion | 90% CI | | SE |
|---|---|---|---|---|---|
| | | | 5% | 95% | |
| 0.2 | 94 | 0.29 | 0.25 | 0.33 | 0.025 |
| 0.3 | 132 | 0.41 | 0.36 | 0.46 | 0.027 |
| 0.4 | 2 | 0.01 | 0.00 | 0.01 | 0.004 |
| 1.1 | 11 | 0.03 | 0.02 | 0.05 | 0.010 |
| 1.2 | 57 | 0.18 | 0.14 | 0.21 | 0.021 |
| 1.3 | 25 | 0.08 | 0.05 | 0.10 | 0.015 |
| 1.4 | 1 | 0.00 | 0.00 | 0.01 | 0.003 |
| 2.1 | 1 | 0.00 | 0.00 | 0.01 | 0.003 |
| Total | 323 | 1.00 | | | |

*Note*: Age composition estimates may not sum to 1 due to rounding error.

Appendix E2.–Length, sex, and adipose clip composition estimates by age for Chinook salmon sport harvest, Kodiak Regulatory Area, 2014 (April 16–August 29; Harvest = 8,049; *n* = 398). Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| Age Class | Number | Length (mm) METF | | | | % Female | % Ad. Clip |
|---|---|---|---|---|---|---|---|
| | | Mean | 90% CI | | SE | | |
| | | | 0.05 | 0.95 | | | |
| 0.2 | 94 | 589 | 579 | 599 | 6.1 | 51.9 | 10.6 |
| 0.3 | 132 | 675 | 665 | 685 | 6.4 | 63.4 | 6.8 |
| 0.4 | 2 | 865 | 626 | 1,104 | 145.0 | 50.0 | 0.0 |
| 1.1 | 11 | 473 | 445 | 501 | 17.2 | 16.7 | 9.1 |
| 1.2 | 57 | 624 | 611 | 637 | 7.9 | 61.7 | 26.3 |
| 1.3 | 25 | 716 | 683 | 749 | 20.0 | 57.1 | 36.0 |
| 1.4 | 1 | 710 | | | | 0 | 100.0 |
| 2.1 | 1 | 562 | | | | 100.0 | 100.0 |
| Unknown | 75 | 657 | 639 | 675 | 10.8 | 57.6 | 14.6 |
| Total | 398 | 642 | 635 | 649 | 4.5 | 57.9 | 14.3 |

Appendix E3.–Age composition estimates for Chinook salmon sport harvest, Kodiak Regulatory Area, 2015 (May 17–August 14; Harvest = 6,709; *n* = 255). Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| Age Class | Number | Proportion | 90% CI 5% | 90% CI 95% | SE |
|---|---|---|---|---|---|
| 0.2 | 110 | 0.43 | 0.38 | 0.48 | 0.031 |
| 0.3 | 100 | 0.39 | 0.34 | 0.44 | 0.031 |
| 0.4 | 2 | 0.01 | 0.00 | 0.02 | 0.006 |
| 1.1 | 9 | 0.04 | 0.01 | 0.06 | 0.012 |
| 1.2 | 20 | 0.08 | 0.05 | 0.11 | 0.017 |
| 1.3 | 11 | 0.04 | 0.02 | 0.07 | 0.013 |
| 1.4 | 3 | 0.01 | 0.00 | 0.02 | 0.007 |
| Total | 255 | 1.00 | | | |

*Note*: Age composition estimates may not sum to 1 due to rounding error.

Appendix E4.–Length, sex, and adipose clip composition estimates by age for Chinook salmon sport harvest, Kodiak Regulatory Area, 2014 (April 16–August 29; Harvest = 8,049; *n* = 278). Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| Age Class | Number | Length (mm) METF Mean | 90% CI 0.05 | 90% CI 0.95 | SE | % Female | % Ad. Clip |
|---|---|---|---|---|---|---|---|
| 0.2 | 106 | 640 | 480 | 800 | 9.4 | 48.2 | 12.7 |
| 0.3 | 93 | 722 | 550 | 894 | 10.8 | 72.0 | 6.1 |
| 0.4 | 1 | 830 | | | | 100.0 | 0.0 |
| 1.1 | 9 | 627 | 377 | 877 | 50.4 | 75.0 | 44.4 |
| 1.2 | 19 | 684 | 477 | 891 | 28.8 | 80.0 | 45.0 |
| 1.3 | 11 | 730 | 567 | 893 | 29.8 | 63.6 | 63.6 |
| 1.4 | 3 | 747 | 542 | 952 | 71.7 | 100.0 | - |
| Unknown | 36 | 684 | 514 | 854 | 17.1 | 43.8 | 40.0 |
| Total | 278 | 681 | 499 | 863 | 6.6 | 60.5 | 19.8 |

Appendix E5.–Age composition estimates for Chinook salmon sport harvest, Kodiak Regulatory Area, 2016 (May 22–August 13; Harvest = NA; $n$ = 343). Estimates include the number of samples, mean proportion, 90% confidence interval (CI), and standard error (SE).

| Age Class | Number | Proportion | 90% CI | | SE |
|---|---|---|---|---|---|
| | | | 5% | 95% | |
| 0.1 | 4 | 0.01 | 0.00 | 0.02 | 0.006 |
| 0.2 | 107 | 0.31 | 0.27 | 0.35 | 0.025 |
| 0.3 | 152 | 0.44 | 0.40 | 0.49 | 0.027 |
| 0.4 | 3 | 0.01 | 0.00 | 0.02 | 0.005 |
| 1.1 | 16 | 0.05 | 0.03 | 0.07 | 0.011 |
| 1.2 | 30 | 0.09 | 0.06 | 0.11 | 0.015 |
| 1.3 | 32 | 0.09 | 0.07 | 0.12 | 0.016 |
| 1.4 | 3 | 0.01 | 0.00 | 0.02 | 0.005 |
| Total | 343 | 1.00 | | | |

*Note*: Age composition estimates may not sum to 1 due to rounding error.

Appendix E6.–Length, sex, and adipose clip composition estimates by age for Chinook salmon sport harvest, Kodiak Regulatory Area, 2016 (May 22–August 13; Harvest = NA; $n$ = 450). Estimates include the number of samples, mean length, 90% confidence interval (CI), standard error (SE), and percentages of female and adipose clipped (% Ad. Clip) fish.

| Age Class | Number | Length (mm) METF | | | | % Female | % Ad. Clip |
|---|---|---|---|---|---|---|---|
| | | Mean | 90% CI | | SE | | |
| | | | 0.05 | 0.95 | | | |
| 0.1 | 4 | 440 | 390 | 490 | 15.1 | 50.0 | 0.0 |
| 0.2 | 107 | 597 | 509 | 685 | 5.2 | 45.3 | 15.0 |
| 0.3 | 152 | 693 | 594 | 792 | 4.9 | 55.7 | 13.8 |
| 0.4 | 3 | 793 | 715 | 871 | 27.3 | 100.0 | 0.0 |
| 1.1 | 16 | 490 | 391 | 589 | 15.0 | 50.0 | 25.0 |
| 1.2 | 30 | 640 | 544 | 736 | 10.6 | 42.9 | 30.0 |
| 1.3 | 31 | 718 | 620 | 816 | 10.7 | 41.7 | 12.9 |
| 1.4 | 3 | 805 | 732 | 878 | 25.7 | 100.0 | 0.0 |
| Unknown | 104 | 665 | 514 | 816 | 9.0 | 53.3 | 31.5 |
| Total | 450 | 653 | 508 | 798 | 4.2 | 51.2 | 19.5 |

# APPENDIX F: CHINOOK SALMON CODED WIRE TAG RECOVERIES FROM THE COMMERCIAL FISHERY IN THE KODIAK AREA, 2014-2016

Appendix F1.–Chinook salmon coded wire tag recoveries from the commercial fishery in the Kodiak area, 2014–2016.

| State/Province-Country Specific Location | Year 2014 | 2015 | 2016 |
|---|---|---|---|
| Alaska-USA | 11 | 6 | 21 |
| (W) Stikine R 108-40 | 1 | 0 | 0 |
| (W) Taku R 111-32 | 1 | 0 | 0 |
| (W) Unuk R 101-75 | 0 | 0 | 1 |
| Crystal Lake | 3 | 2 | 4 |
| Little Port Walter | 2 | 1 | 8 |
| Macaulay | 0 | 0 | 3 |
| Medvejie | 1 | 0 | 1 |
| Port Saint Nicholas | 0 | 0 | 1 |
| Whitman Lake | 3 | 3 | 1 |
| William Jack Hernandez | 0 | 0 | 2 |
| British Columbia-Canada | 36 | 44 | 85 |
| H-Alberni Inlet Seapen | 0 | 0 | 2 |
| H-Bedwell Est Seapen | 0 | 0 | 11 |
| H-Deep Creek/ Skna H | 10 | 3 | 2 |
| H-Discovery Passage Seape | 0 | 1 | 0 |
| H-Omega Pacific H | 2 | 0 | 0 |
| H-Phillips River H | 1 | 0 | 1 |
| H-Port Renfrew Seapen | 0 | 0 | 3 |
| H-Puntledge River H | 0 | 0 | 2 |
| H-Quinsam River H | 0 | 1 | 1 |
| H-Robertson Creek H | 9 | 29 | 49 |
| H-Shuswap River, Middle, | 1 | 1 | 3 |
| H-Snootli Creek H | 11 | 7 | 11 |
| H-Spius Creek H | 1 | 0 | 0 |
| H-Wannock Estuary Seapen | 1 | 2 | 0 |

| State/Province Specific Location | Year 2014 | 2015 | 2016 |
|---|---|---|---|
| Washington-USA | 93 | 89 | 82 |
| (W) Hanford Reach Stock | 0 | 1 | 1 |
| (W) Lewis R -Nf 27.0168 | 0 | 1 | 0 |
| Bear Springs 1 (20) | 1 | 0 | 0 |
| Carlton Acclimation Pond | 4 | 5 | 2 |
| Chelan Falls Hatchery | 13 | 14 | 13 |
| Chief Joseph Hatchery | 0 | 1 | 3 |
| Cle Elum Hatchery | 1 | 0 | 0 |
| Cowlitz Salmon Hatchery | 0 | 0 | 1 |
| Dryden Pond | 9 | 13 | 4 |
| Entiat Nfh | 6 | 7 | 1 |
| Fallert Cr Hatchery | 1 | 0 | 2 |
| Forks Creek Hatchery | 0 | 1 | 6 |
| Gobar Pond (27) | 1 | 1 | 1 |
| Hoko Falls Hatchery | 1 | 2 | 3 |
| Kalama Falls Hatchery | 2 | 0 | 0 |
| Klickitat Hatchery (Ykfp) | 1 | 1 | 5 |
| Lewis River Hatchery | 0 | 0 | 1 |
| Lonesome Cr Hatchery | 0 | 1 | 2 |
| Ltl White Salmon Nfh | 2 | 2 | 1 |
| Lyons Ferry Hatchery | 2 | 0 | 0 |
| Makah Nfh On Tsoo-Yess R | 3 | 3 | 0 |
| Priest Rapids Hatchery | 7 | 4 | 4 |
| Quinault Lk Hatchery | 10 | 5 | 11 |
| Ringold Springs Hatchery | 0 | 1 | 0 |
| Salmon R Fish Cultur | 6 | 5 | 4 |
| Similkameen Hatchery | 15 | 14 | 4 |
| Wells Hatchery | 8 | 7 | 13 |

| State/Province Specific Location | Year 2014 | 2015 | 2016 |
|---|---|---|---|
| Oregon-USA | 44 | 25 | 27 |
| (W) Salmon R Wild | 1 | 0 | 0 |
| Bonneville Hatchery | 1 | 0 | 0 |
| Cedar Cr Hatchery | 0 | 1 | 0 |
| Cedc Youngs Bay Net | 0 | 1 | 1 |
| Clackamas Hatchery | 2 | 2 | 0 |
| Dexter Ponds (Willam | 0 | 2 | 1 |
| Elk R Hatchery | 1 | 0 | 0 |
| Gnat Cr Hatchery | 0 | 2 | 0 |
| Marion Forks Hatch | 8 | 4 | 5 |
| Mckenzie Hatchery | 8 | 4 | 8 |
| Minto Ponds (N Santiam R) | 0 | 0 | 3 |
| Morgan Cr (Step-Coos | 1 | 0 | 0 |
| Salmon R Hatchery | 4 | 1 | 2 |
| Sandy Hatchery | 1 | 1 | 2 |
| South Santiam Hatch | 3 | 0 | 5 |
| Trask R Hatchery | 0 | 1 | 0 |
| Umatilla Hatchery | 0 | 2 | 0 |
| Warm Springs Nfh | 2 | 1 | 0 |
| Willamette Hatchery | 12 | 3 | 0 |
| Idaho-USA | 2 | 0 | 0 |
| Npt Hatchery | 2 | 0 | 0 |
| Total CWT | 186 | 164 | 215 |
| Total Chinook inspected | 3,275 | 2,839 | 3,292 |
| % CWT | 5.7 | 5.8 | 6.5 |

# APPENDIX G: CHINOOK SALMON CODED WIRE TAG RECOVERIES FROM THE MARINE SPORT FISHERY IN THE KODIAK AREA, 2014–2016

Appendix G1.–Chinook salmon coded wire tag recoveries from the sport fishery in the Kodiak area, 2014-2016.

| State/Province | Specific Location | 2014 | 2015 | 2016 |
|---|---|---|---|---|
| AK | | 0 | 1 | 4 |
| | Little Port Walter | 0 | 0 | 2 |
| | Medvedjie | 0 | 0 | 1 |
| | Whitman Lake | 0 | 1 | 1 |
| BC | | 8 | 5 | 15 |
| | Robertson Creek | 1 | 1 | 7 |
| | Snootli Creek | 2 | 2 | 6 |
| | Shuswap River | 0 | 0 | 1 |
| | Deep Creek | 5 | 1 | 1 |
| | Discovery Passage | 0 | 1 | 0 |
| WA | | 11 | 8 | 18 |
| | Chelan Falls | 0 | 1 | 5 |
| | Salmon R. Fish Culture | 4 | 2 | 3 |
| | Lonesome Creek | 0 | 0 | 2 |
| | Quinault Lake | 2 | 1 | 0 |
| | Wells Hatchery | 1 | 2 | 2 |
| | Simikameen Hatchery | 1 | 0 | 2 |
| | Hoko Falls | 0 | 0 | 1 |
| | Fallert Creek | 0 | 0 | 1 |
| | Entiat Hatchery | 0 | 0 | 1 |
| | Dryden Pond | 1 | 1 | 1 |
| | Carlton Acclimation Pond | 1 | 0 | 0 |
| | Lyons Ferry | 1 | 0 | 0 |
| | Priest Rapids | 0 | 1 | 0 |
| OR | | 4 | 3 | 2 |
| | Marion Forks | 2 | 0 | 0 |
| | McKenzie Hatchery | 1 | 1 | 0 |
| | Trask Hatchery | 1 | 0 | 0 |
| | Clackamas | 0 | 1 | 0 |
| | Elk River | 0 | 1 | 0 |
| | South Santiam | 0 | 0 | 2 |
| Total Number of CWT recoveries | | 23 | 17 | 39 |
| Total number adipose clipped fish | | 56 | 59 | 84 |
| Percent adipose clips with CWT | | 41.1 | 28.8 | 46.4 |
| Total number of samples collected | | 398 | 278 | 450 |
| Percent of CWT from samples | | 5.8 | 6.1 | 8.7 |

# APPENDIX H: RESULTS OF STATISTICAL QUALITY CONTROL

Appendix H1.–Results of the statistical quality control by spatiotemporal strata for Chinook salmon catch samples analyzed to estimate the stock composition of KMA commercial harvests in 2014–2016. Spatiotemporal 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 and duplicate fish, and the final number statistically analyzed are provided.

| | | | | Number of Fish | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Fish Removed | | |
| Area Stratum | Year | Temporal Stratum | Period | Genotyped | Missing Loci | Duplicate | Final |
| Northwest Kodiak/Afognak | 2014 | 1 | 6/1–7/5 | 379 | 2 | 1 | 376 |
| Northwest Kodiak/Afognak | 2014 | 2 | 7/6–8/5 | 380 | 3 | 2 | 375 |
| Northwest Kodiak/Afognak | 2015 | 1 | 6/1–7/5 | 380 | 1 | 1 | 378 |
| Northwest Kodiak/Afognak | 2015 | 2 | 7/6–8/5 | 380 | 2 | 0 | 378 |
| Northwest Kodiak/Afognak | 2016 | 1 | 6/1–7/5 | 379 | 0 | 0 | 379 |
| Northwest Kodiak/Afognak | 2016 | 2 | 7/6–8/5 | 379 | 7 | 1 | 371 |
| Southwest Kodiak/Alitak | 2014 | 1 | 6/1–7/5 | 287 | 9 | 0 | 278 |
| Southwest Kodiak/Alitak | 2014 | 2 | 7/6–8/5 | 378 | 4 | 0 | 374 |
| Southwest Kodiak/Alitak | 2015 | 1 | 6/1–7/5 | 376 | 10 | 1 | 365 |
| Southwest Kodiak/Alitak | 2015 | 2 | 7/6–8/5 | 378 | 7 | 0 | 371 |
| Southwest Kodiak/Alitak | 2016 | 1 | 6/1–7/5 | 310 | 2 | 0 | 308 |
| Southwest Kodiak/Alitak | 2016 | 2 | 7/6–8/5 | 291 | 24 | 0 | 267 |
| Eastside Kodiak/Afognak | 2014 | 1 | 6/1–7/5 | 293 | 5 | 1 | 287 |
| Eastside Kodiak/Afognak | 2014 | 2 | 7/6–8/5 | 379 | 4 | 0 | 375 |
| Eastside Kodiak/Afognak | 2015 | 1 | 6/1–7/5 | 380 | 5 | 2 | 373 |
| Eastside Kodiak/Afognak | 2015 | 2 | 7/6–8/5 | 285 | 7 | 0 | 278 |
| Eastside Kodiak/Afognak | 2016 | 1 | 6/1–7/5 | 316 | 3 | 0 | 313 |
| Eastside Kodiak/Afognak | 2016 | 2 | 7/6–8/5 | 322 | 3 | 0 | 319 |
| | | | Total | 6,272 | 98 | 9 | 6,165 |

-continued-

| Area Stratum | Year | Temporal Stratum | Period | Number of Fish | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Fish Removed | | |
| | | | | Genotyped | Missing Loci | Duplicate | Final |
| Mainland | 2014 | 2 | 7/6–8/5 | 379 | 15 | 2 | 362 |
| Mainland | 2015 | 2 | 7/6–8/5 | 282 | 4 | 1 | 277 |
| Mainland | 2016 | 1 | 6/1–7/5 | 379 | 10 | 1 | 368 |
| Mainland | 2016 | 2 | 7/6–8/5 | 379 | 22 | 0 | 357 |
| Sport Fishery | 2014 | | 4/16–8/29 | 414 | 9 | 2 | 403 |
| Sport Fishery | 2015 | | 5/17–8/14 | 283 | 2 | 7 | 274 |
| Sport Fishery | 2016 | | 5/22–813 | 441 | 1 | 0 | 440 |
| | | | Total | 2,557 | 63 | 13 | 2,481 |
| | | | Overall KMA Total | 8,829 | 161 | 22 | 8,646 |