Regional Information Report 5J17-03

Genetic Stock Identification of Upper Cook Inlet Coho Salmon Harvest, 2013-2015

by

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and

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February 2017

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

Symbols and Abbreviations

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

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

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GENETIC STOCK IDENTIFICATION OF UPPER COOK INLET COHO SALMON HARVEST, 2013-2015

by

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February 2017

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MEMORANDUM

TO: Scott Kelly, Director
Division of Commercial Fisheries

And

Tom Brookover, Director
Division of Sport Fish

DATE: February 7, 2017

THROUGH: Christopher Habicht, Principal Geneticist
Division of Commercial Fisheries, Statewide

SUBJECT: Genetic Stock Identification of Upper Cook Inlet Coho Salmon Harvest, 2013–2015

FROM: Andrew Barclay, Fishery Biologist III
Division of Commercial Fisheries, Statewide

ABSTRACT

Coho salmon support important fisheries in Upper Cook Inlet. The commercial fishery harvests an average of 170,410 fish annually (2006–2015) during their homeward migration, but little is known about stock contributions. Without stock-specific harvest information, the exploitation and productivity of stocks cannot be estimated, limiting management that is based on sustained yield. Here we report the genetic mixed stock analysis of coho salmon harvested in the 2013–2015 test and commercial drift and set gillnet fisheries of Upper Cook Inlet. Analyses were performed using a previously reported baseline of 84 populations and 86 SNP markers. No consistent spatial or temporal patterns were observed in the stock compositions of either the southern or northern offshore test fisheries across years. However, within years, the stock compositions of the 2 test fisheries were similar. Samples from the commercial coho salmon fisheries in Upper Cook Inlet represented 77–86% of the harvest. Northern Cook Inlet coho salmon stocks (*Northwest CI/Yentna, Susitna,* and *Knik)* made up the majority of the harvest and we found several consistent temporal and spatial patterns of stock compositions within the commercial fishery across all 3 years. In the Central District drift gillnet fishery, stock proportions were fairly consistent within years until August, when proportions of *Northwest CI/Yentna* increased in tandem with fishery restrictions. In the Northern District set gillnet harvest, Northern stock proportions decreased and proportions of *Turnagain/Northeast CI* coho salmon increased after about August 12; General Subdistrict (south) harvests were dominated by *Susitna* and *Northwest CI/Yentna* coho salmon, General Subdistrict (north) harvests were dominated by *Knik*, and Eastern Subdistrict harvests were dominated by *Turnagain/Northeast CI* coho salmon. These and future Cook Inlet coho salmon commercial stock composition estimates will aid in the development of brood tables, provide for development of coho salmon escapement goals using spawner-recruit analysis, and provide data for annual run forecasts.

Key words: Cook Inlet, coho salmon, *Oncorhynchus kitsch*, genetic stock identification, mixed-stock analysis, MSA, commercial fishery, single nucleotide polymorphism, SNP

INTRODUCTION

BACKGROUND

Populations of coho salmon *Oncorhynchus kisutch* support important sport and commercial fisheries in the Upper Cook Inlet (UCI) Management Area. Harvests of coho salmon in the UCI commercial fishery averaged 170,410 fish during 2006–2015 (Shields and Dupuis 2016). These harvests occur during the homeward migration in the open ocean or in the lower reaches of river drainages, areas where stocks are mixed. Sockeye salmon *O. nerka* are the main target of commercial salmon fisheries in UCI; coho salmon are harvested incidentally in both drift gillnet and set gillnet fisheries (Figure 1). The majority of coho salmon are harvested in the Central District drift gillnet (58.5%) and Northern District set gillnet (18.7%) fisheries (2006–2015 average). Set gillnet harvests in the Central District are lower with larger harvests in the Kalgin and Western Subdistricts (2006–2015 average: 13.4%) than in the Upper Subdistrict (2006–2015 average: 9.4%). Without stock-specific harvest information, the exploitation and productivity of any single stock cannot be estimated, limiting management for sustained yield by the Alaska Department of Fish and Game (ADF&G) under the Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222).

Genetic mixed stock analysis (MSA) has been used in Cook Inlet to estimate the stock composition of sockeye salmon in the commercial fishery since the 1990s (Seeb et al. 2000; Habicht et al. 2007; Barclay et al. 2010a, 2010b, 2013, 2014) and more recently for Chinook salmon *O. tshawytscha* (Eskelin et al 2013; Eskelin and Barclay 2015, 2016). This method requires the genetic characterization of all populations potentially contributing to the fishery harvests (baseline) as well as fishery samples (Pella and Milner 1987). To estimate the stock composition of coho salmon harvested in Cook Inlet fisheries, a genetic baseline had to be developed.

In 2013 the state funded a 3-phase study to develop a Cook Inlet coho salmon baseline and apply this baseline to analyze fishery mixtures. The first phase involved an analysis using existing samples collected by the U.S. Fish and Wildlife Service and opportunistically by ADF&G personnel to determine whether the genetic diversity among Cook Inlet coho salmon populations would allow for accurate MSA estimates. Statistical analysis of these data indicated that sufficient variation exists among Cook Inlet coho salmon stocks (DeCovich et al. 2013), and that it was appropriate to proceed with baseline development (phase II) and sampling of the UCI commercial harvest for genetic MSA (phase III).

The baseline development phase of the study was completed in January, 2017. The genetic baseline contains 84 Cook Inlet coho salmon populations analyzed for 86 genetic markers (Barclay et al. 2017). The new baseline was tested for MSA, and 7 groups of populations (reporting groups) were found to be sufficiently identifiable (Figure 2).

Here we use the baseline to estimate the stock composition of samples collected in 2013–2015 from offshore test fisheries and the commercial fishery in Cook Inlet. We analyze time and area strata that represent 86% (2013), 77% (2014), and 86% (2015) of the commercial catch of coho salmon in UCI.

MANAGEMENT OF UPPER COOK INLET SALMON

Management Strategy

UCI commercial fisheries are managed to achieve salmon escapement goals (Fair et al. 2013). Salmon are commercially harvested in UCI using drift and set gillnets. Drift gillnet fisheries occur in the Central District only whereas set gillnet fisheries occur in both the Central and Northern districts on both eastern and western shores (Figure 1). During each season, regularly scheduled fishery openings occur for 12 hours on Mondays and Thursdays beginning at 7:00 a.m. Additional fishing time is allowed via emergency orders depending on catches, escapements, and the projected run size of sockeye salmon. Each season generally begins in late June and runs through early August for a total of about 14 regularly scheduled fishery openings. While commercial fisheries in UCI target sockeye salmon with escapement goals, 3 coho salmon stocks also have escapement goals: Fish Creek, Jim Creek, and Little Susitna River (Fair et al. 2013).

Drift and set gillnet fisheries are sometimes restricted to smaller portions of the district to reduce the harvest of specific salmon stocks and achieve escapement goals (Figures 3–5). These area restrictions vary throughout each season and across years. Drift gillnet fisheries are sometimes restricted to areas south of the southern tip of Kalgin Island, or only the Kenai or Kasilof corridor along the eastside beaches to reduce harvest of Susitna sockeye salmon and Northern District coho salmon (Figures 3 and 4). During some seasons, drift and set gillnet fisheries are restricted to only the Kasilof River Special Harvest Area (KRSHA) near the mouth of the Kasilof River to harvest Kasilof River sockeye salmon in excess of escapement needs while minimizing harvests of Kenai River sockeye salmon (Figure 5). The Kenai, East Forelands, and Kasilof sections of Upper Subdistrict are managed as separate units. Set gillnet fisheries are sometimes restricted to harvest within a half-mile of shore in the Kasilof Section and closed in the Kenai and East Forelands sections to reduce harvests of Kenai River populations. Descriptions of the management plans governing these fisheries and details of these restrictions for specific years can be found in the UCI Annual Management Reports (Shields and Dupuis 2013, 2015, 2016) and in reports to the Alaska Board of Fisheries. These area restrictions need to be considered when evaluating genetic stock composition estimates in this report because some of the variability in these estimates results from the areas where the fish were caught. All genetic stock composition estimates in this report are linked to information about these area restrictions (Shields and Dupuis 2013, 2015, 2016; Appendix A1 and A2).

Description of Fishery in Study Years

2013

In 2013, the preseason forecast for the total UCI sockeye salmon run (6.7 million) was above average with an above average Kenai (4,374,000) forecast, and below average Kasilof (903,000) and Susitna (363,000) forecasts (Eggers et al. 2013). In 2011, the Alaska Board of Fisheries modified the 3-tiered management system in the Kenai River to reflect the new DIDSON-based inriver goal for this system. The 3 tiers were delineated at (1) less than 2.3 million fish, (2) 2.3 to 4.6 million fish, and (3) over 4.6 million fish. Since the Kenai forecast was for a run of greater than 2.3 million sockeye salmon, ADF&G started the season managing for an inriver Kenai sockeye salmon goal range of 1,000,000–1,200,000 counted by DIDSON sonar with 51 hours of additional fishing time allowed in the Upper Subdistrict set gillnet fishery beginning July 8

(Shields and Dupuis 2013). On July 24, commercial fisheries staff estimated the total Kenai River sockeye salmon run would range between 3.4 and 3.8 million fish, so fisheries management continued to follow the guidelines for run sizes between 2.3 and 4.6 million fish.

Poor performance of the Kenai River late-run Chinook salmon run combined with the above average sockeye salmon run led to an atypical management strategy during late July. On July 23, the Upper Subdistrict set gillnet fishery was closed, because Kenai River late-run Chinook salmon escapement projections indicated the escapement goal would not be achieved. With the Upper Subdistrict set gillnet fishery closed, the department was forced to use the KRSHA and the drift gillnet fishery to control sockeye salmon escapement into the Kenai and Kasilof rivers. The KRSHA was opened for 186 hours between July 21 and August 3 to control Kasilof sockeye salmon escapement while minimizing harvests of Kenai River late-run Chinook salmon. All 6 regularly scheduled drift gillnet fishing periods from July 11 to July 29 were restricted to reduce harvests of northern bound sockeye and coho salmon. The drift gillnet fleet fished in the Expanded Kenai and Expanded Kasilof Corridors for 12 additional days between July 11 and July 30 to reduce escapements of Kenai and Kasilof sockeye salmon (Shields and Dupuis 2013).

The coho salmon harvest in 2013 (260,963) was 53% greater than the recent 10-year average harvest (170,410). The coho salmon count on Fish Creek (7,593) exceeded the sustainable escapement goal (SEG) of 1,200–4,400, while the coho salmon count on the Little Susitna River (13,583) was within the SEG (10,100–17,700). At the end of the season, the Kasilof sockeye salmon escapement (489,654 DIDSON sonar units) exceeded the upper optimal escapement goal (390,000), and the Kenai escapement (1,359,893 DIDSON sonar units) exceeded the inriver goal range (1,000,000–1,200,000). Overall, the total sockeye salmon run (5.8 million) was 13% below the preseason forecast (Shields and Dupuis 2013).

2014

The 2014 preseason forecast for the total UCI sockeye salmon run (6.1 million) was slightly below average with a slightly below average Kenai (3,792,000) forecast, above average Kasilof (1,062,000) forecast, and below average Susitna (264,000) forecast (Munro and Tide 2014). Since the Kenai forecast was for a run of greater than 2.3 million sockeye salmon, ADF&G started the season managing for an inriver Kenai sockeye salmon goal range of 1,000,000–1,200,000 counted by DIDSON sonar (Shields and Dupuis 2015). On July 23, commercial fisheries staff estimated the total Kenai River sockeye salmon run would range between 2.7 and 5.6 million fish.

Poor returns of Chinook salmon to the Kenai River in 2014 again impacted management of the commercial fishery. The Kenai River Chinook salmon fishery began the season (July 1) with a no-bait restriction and the Upper Subdistrict set gillnet fishery was restricted to 36 hours of fishing time per week with no regular Monday\Thursday fishing periods as required by the Kenai River Late-Run King Salmon Management Plan (5 AAC 21.359).

), because the preseason forecast for Kenai River Chinook salmon was for a run of only 19,000 fish. On July 19, Kenai River Chinook salmon sport fishery was restricted to catch and release, and as a result the Upper Subdistrict set gillnet fishery was further restricted to no more than 12 hours per week. With the Upper Subdistrict set gillnet fishery restricted the department was forced to use the KRSHA and the drift gillnet fishery to control sockeye salmon escapement into the Kenai and Kasilof rivers. The KRSHA was opened for 304 hours between July 16 and

August 2 to control Kasilof sockeye salmon escapement while minimizing harvests of Kenai River late-run Chinook salmon.

The drift gillnet fleet was restricted primarily to the east side of the Central District during the latter half of July. In July, the drift gillnet fleet fished 1 day in the regular Kasilof Section, 4 days in the Expanded Kenai/Kasilof sections, 11 days in the Expanded Kenai/Kasilof and Anchor Point sections, 5 days in Drift Area 1, and 2 days in all of the Central District. In part due to these restrictions, the coho salmon harvest in 2014 (134,000) was 29% less than the recent 10-year average harvest (189,000). Coho salmon SEGs on Fish Creek (1,200–4,400) and Little Susitna River (10,100–17,700) were exceeded (Fish Creek,10,283; Little Susitna River, 24,200), while the coho salmon count on Jim Creek (122) was below the SEG (450–700). At the end of the season, the Kasilof sockeye salmon escapement (439,977 DIDSON sonar units) exceeded the upper optimal escapement goal (390,000), and the Kenai escapement (1,524,706 DIDSON sonar units) exceeded the inriver goal range (1,000,000–1,200,000). Overall, the total sockeye salmon run (5.3 million) was 13% below the preseason forecast (Shields and Dupuis 2015).

2015

The 2015 preseason forecast for the total UCI sockeye salmon run (5.8 million) was slightly below average with a slightly below average Kenai (3,550,000) forecast, above average Kasilof (1,092,000) forecast, and below average Susitna (276,000) forecast (Munro 2015). Since the Kenai forecast was for a run of greater than 2.3 million sockeye salmon ADF&G started the season managing for an inriver Kenai sockeye salmon goal range of 1,000,000–1,200,000 counted by DIDSON sonar (Shields and Dupuis 2016).

Commercial fishery management was again influenced by poor returns of Chinook salmon expected to the Kenai River. The Kenai River Chinook salmon fishery began the season (July 1) with a no-bait restriction and the Upper Subdistrict set gillnet fishery was restricted to 36 hours of fishing time per week with no regular Monday\Thursday fishing periods, because the preseason forecast for Kenai River Chinook salmon was 22,000 fish. Higher than expected Chinook salmon passage on the Kenai River resulted in removal of the no-bait restriction in the sport fishery and removal of the 36-hour restriction in the Upper Subdistrict set gillnet fishery on July 25.

On July 27, commercial fisheries staff estimated the total Kenai River sockeye salmon run would range between 2.2 and 3.5 million fish. Beginning on August 1, a different provision of the Kenai River Late-Run King Salmon Management Plan (5 AAC 21.359) went into effect. This provision required that the Upper Subdistrict set gillnet fishery be restricted to 36 hours of fishing time per week with no regular period if the Kenai River Chinook salmon escapement was projected to be between 16,500 and 22,500 fish. On August 6 it was no longer certain that the Chinook salmon escapement would exceed 22,500 fish. As a result the Upper Subdistrict set gillnet fishery was again restricted to 36 hours of fishing time per week with no regular periods for the remainder of the season. With the Upper Subdistrict set gillnet fishery restricted, the department was forced to use the KRSHA and the drift gillnet fishery to control sockeye salmon escapement into the Kenai and Kasilof rivers.

The KRSHA was opened on all or part of 21 different days to control Kasilof sockeye salmon escapement while minimizing harvests of Kenai River late-run Chinook salmon. The drift gillnet fleet was restricted primarily to the east side of the Central District during the latter half of July. In July, the drift gillnet fleet fished 1 day in the regular Kasilof Section, 2 days in the Expanded

Kenai/Kasilof sections, 7 days in the Expanded Kenai/Kasilof and Anchor Point sections, 4 days in Drift Area 1, and 2 days in all of the Central District. Due to the late sockeye salmon run, the drift gillnet fleet also fished 6 days in the full Central District in the first 13 days of August. The coho salmon harvest in 2015 (211,000) was 24% greater than the recent 10-year average harvest (171,000). The coho salmon count on Fish Creek (7,370) exceeded the SEG (1,200–4,400), while the coho salmon count on the Little Susitna River (12,421) was within the SEG (10,100–17,700), and escapement to Jim Creek (571) was within the SEG (450–700). The Kasilof sockeye salmon escapement (470,667 DIDSON sonar units) exceeded the upper optimal escapement goal (390,000) and the Kenai escapement (1,704,767 DIDSON sonar units) exceeded the inriver goal range (1,000,000–1,200,000). Overall, the total sockeye salmon run (6.3 million) was 9% greater than the preseason forecast (Shields and Dupuis 2016).

OBJECTIVES

1) Collect coho salmon tissue samples for genetic analysis throughout the 2013–2015 fishing seasons from the UCI commercial drift and set gillnet fisheries and offshore test drift gillnet fishery.
2) Subsample tissues in proportion to catch within spatial and temporal strata.
3) Analyze selected tissues for 86 single nucleotide polymorphism markers.
4) Estimate stock proportions of coho salmon for each stratum for 7 reporting groups.
5) Estimate stock-specific harvest of coho salmon for each stratum and for combined strata for 7 reporting groups.

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 of a given gene or DNA sequence.

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

Credibility Interval. In Bayesian statistics, a credibility interval is a posterior probability interval. Credibility intervals are a direct statement of probability: i.e., a 90% credibility interval has a 90% chance of containing the true answer. This is different than the confidence intervals used in frequentist statistics.

Coefficient of Variation (CV). The ratio of the standard deviation to the mean.

District. Waters open to commercial salmon fishing. Commercial fishing districts, subdistricts and sections in Cook Inlet are defined in Alaska Administrative Code (5 AAC 21.200).

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

Genetic Marker. A known 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 Equilibrium (H-W). The genotype frequencies that would be expected from given allele frequencies assuming random mating, no mutation (the alleles don't 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 (as a result of fishing activities) from returning salmon prior to escapement.

Harvest Rate. The fraction of returning salmon harvested.

Locus (plural, loci). A fixed position or region on a chromosome.

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.

Linked Markers. Markers showing linkage disequilibrium, or physical linkage on a chromosome.

Mixed Stock Analysis (MSA). Method using allele frequencies from populations and genotypes from mixture samples to estimate stock compositions of mixtures.

Population. A locally interbreeding group that has little interbreeding with other spawning aggregations other than the natural background stray rate, is uniquely adapted to a spawning habitat, and has inherently unique attributes (Ricker 1958) that result in different productivity rates (Pearcy 1992; NRC 1996). This population definition is analogous to the spawning aggregations described by Baker et al. (1996) and the demes by NRC (1996).

Reporting Group. A group of populations in a genetic baseline to which portions of a mixture are allocated during mixed stock analyses, constructed based on a combination of management needs and genetic distinction. See definition for *Salmon Stock* for breakdown of reporting groups (stocks) in Upper Cook Inlet.

Run. The total number of salmon of a stock surviving to adulthood and returning to the vicinity of the natal stream in any calendar year. The annual run is composed of both the harvest of adult salmon and the escapement in any calendar year. With the exception of pink salmon, the 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)).

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

Salmon Stock. A locally interbreeding group of salmon (population) that is distinguished by a distinct combination of genetic, phenotypic, life history, and habitat characteristics or an aggregation of 2 or more interbreeding groups (populations) which occur within the same geographic area and is managed as a unit (from 5 AAC 39.222(f)). For purposes of this study, stocks in Cook Inlet were delineated based on the major population or aggregation of populations for which ADF&G estimates escapement or for a population or aggregation of populations which occur in a geographic area for which ADF&G does not estimate escapement. Upper Cook Inlet stocks are defined as 1) West side populations south of Little Jack Creek (*Southwest CI*); 2) West side populations from Little Jack Creek north to the Susitna River, Alexander Creek, and Yentna River populations (*Northwest CI/Yentna*); 3) Susitna River mainstem populations (*Susitna*); 4) Knik Arm populations and Campbell Creek (*Knik*); 5) Turnagain Arm and northeast Cook Inlet

populations (*Turnagain/Northeast CI*); 6) Kenai and Kasilof river populations (*Kenai/Kasilof*); and 7) Kenai Peninsula populations south of the Kasilof River (*Southeast CI*).

METHODS

TISSUE SAMPLING

Tissue Handling

Tissue samples for genetic analysis were collected from coho salmon caught in the commercial catch without regard to size, sex, or condition following the methods outlined in Barclay et al. (2010a). Briefly, an axillary process was excised from individual fish and placed in ethanol in either an individually labeled 2 ml plastic vial or a single well in a 48 deep-well plate. For data continuity, tissue samples were paired with age, sex, and length information collected from each fish. These data were collated and archived by division staff at ADF&G's office in Soldotna.

Offshore Test Fishery

Field sampling

Genetic samples were collected, generally daily, in July from offshore test fishery (OTF) harvests of coho salmon taken at the northern offshore test fishery (NOTF) in 2013 and 2014 and the southern offshore test fishery (SOTF) in 2013–2015. Samples were collected each year at the SOTF at 6 fixed stations along a transect line from Anchor Point to Red River delta (Figure 6). At the NOTF, samples were collected in 2013 from 7 fixed stations along a transect line at the latitude of the northern most point of Kalgin Island (Figure 7). In 2014, NOTF samples were collected from 4 stations on a transect line from Kalifornsky Beach to the northern tip of Kalgin Island and from 4 stations along a transect line from southern tip of Kalgin Island to Clam Gulch Beach (Figure 8). Genetic samples were taken from all fish harvested at each station.

Combining samples for analysis

Samples were combined across consecutive sampling days and adjacent stations to form temporal and spatial mixtures, with a goal of maximizing the number of biologically significant strata while keeping mixture samples sizes over 99 samples.

Commercial Drift and Set Gillnet Fisheries

Field sampling

Commercial fishery harvests were sampled using the same stratified systematic sampling design that was used in Barclay et al. (2010b, 2013) for sockeye salmon harvests. Area strata were determined *a priori* using established fishery districts and subdistricts (Appendix A1). Temporal stratification was determined postseason to best represent the harvest, based on catch patterns in each fishery and the number of samples collected. Because samples could not be collected each day, samples collected on individual days were often used to represent harvests over several adjacent days (Appendix A1 and A2). In general, samples collected from a given area were only used to represent harvests within about 1 week of the sampling date. For each area, the first and last temporal strata were sometimes several days long, because harvests were low and either building or tapering off during these periods (Shields and Dupuis 2013, 2015, 2016). Samples representing these strata were generally collected during peak harvests within each stratum, which typically occurred near the end of the first stratum or beginning of the last stratum. Drift

and set gillnet harvests were oversampled in proportion to expected harvest to allow for composite samples to be constructed in proportion to actual harvest postseason. Sampling was conducted over about 8 weeks (Appendix A1).

Drift gillnet

In general, sampling methods for the Central District drift fishery coho salmon harvests follow those reported in Barclay et al. (2010b, 2013) for sockeye salmon harvests. Sampling was conducted in proportion to expected daily harvest at 1 or more processors located in the Kenai/Kasilof area and from Icicle Seafoods tenders. In 2013–2015, samples were collected from corridor and noncorridor openings to represent the overall drift fishery harvests (Appendix A1). In 2015, pure samples were also collected from Expanded Kenai/Kasilof and Anchor Point section (corridor-only) openings. Many different area restrictions were in effect during these fishing periods (Appendix A1).

Set gillnet

Northern District, Eastern Subdistrict coho salmon harvests were primarily sampled at the Pacific Star processing plant in Nikiski. Sampling goals were set for 12 sampling periods based on the timing of historical harvests. The Northern District, General Subdistrict coho salmon harvests were sampled in the Anchorage area. Sampling goals were set for 11 sampling periods based on the timing of historical harvests. Harvests from the northern portion of the General Subdistrict (statistical areas 247-41, 247-42, and 247-43) were sampled on Monday and Thursday evenings at Copper River Seafoods and the Ship Creek dock. Harvests from the southern portion of the General Subdistrict (statistical areas 247-10, 247-20, and 247-30) were sampled on Tuesdays and Fridays at FAVCO and Copper River Seafoods.

Central District, Upper Subdistrict set gillnet harvests were only sampled in 2015. Set gillnet harvests were oversampled to allow composite samples to be constructed postseason in proportion to actual harvest. We determined substratum sample sizes based on the largest proportion of catch observed in each substratum over the last 5 years. Genetic samples were randomly collected at buying stations near the beaches and at processors. Crews attempted to sample from all the buying stations twice during a period, obtaining half their sample after the high tide and half after the low tide.

Subsampling for analysis

Drift gillnet

Composite random samples were constructed from samples collected at 1 or more processors located in the Kenai and Kasilof areas and from Icicle Seafoods tenders. Temporal strata were identified postseason and composite random samples were constructed in proportion to the actual substratum (fishery/processor) harvests with a goal of 400 fish per stratum. Fishery restrictions were incorporated into defining temporal strata.

Set gillnet

In 2013–2015, composite random samples were constructed in proportion to the actual substratum (fishery/processor) harvests for the Northern District set gillnet fishery for spatial and temporal strata with a goal of 400 fish per stratum. For estimating stock compositions and stock-specific harvests, the Northern District was divided into 3 spatial strata: 1) Eastern Subdistrict, 2) the southern portion of the General Subdistrict, and 3) the northern portion of the General

Subdistrict. For estimating stock compositions through time for the entire Northern District harvest, 4 temporal strata were identified postseason. For the 2015 Upper Subdistrict set gillnet fishery, a single random sample (n = 400) was constructed in proportion to the actual harvests in each subsection/period.

LABORATORY ANALYSIS

Assaying Genotypes

Genomic DNA was extracted from tissue samples using DNeasy® 96 Blood and Tissue Kits by QIAGEN® (Valencia, CA; 2013 and 2014 samples) and NucleoSpin® 96 Tissue Kits by Macherey-Nagel (Düren, Germany; 2015 samples). DNA was screened for 86 SNP markers for all 3 years; however, due the low concentrations of DNA found in the analysis of the 2013 and 2014 samples, a preamplification step was added before screening the DNA from the 2015 samples.

DNA from the 2013 and 2014 samples was genotyped using Fluidigm® 192.24 Dynamic Array™ Integrated Fluidic Circuits (IFCs), which systematically combine 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 s and annealing at 60ºC for 20 s, with a final "Cool-Down" at 25ºC for 10 s. The Dynamic Array IFCs were read on a Biomark™ or EP1™ System (Fluidigm) after amplification and genotyped using Fluidigm SNP Genotyping Analysis software.

The concentration of template DNA from the 2015 samples was increased using a multiplexed preamplification PCR of 42 screened SNP markers. Reactions were conducted in 10 µL volumes consisting of 4 uL of genomic DNA, 5 µL of 2X Multiplex PCR Master Mix (QIAGEN) and 1 µL each (2 µM SNP unlabeled forward and reverse primers). Thermal cycling was performed on a Dual 384-Well GeneAmp® PCR system 9700 (Applied Biosystems) at 95°C hold for 15 min followed by 20 cycles of 95°C for 15 s, 60°C for 4 min, and a final extension hold at 4°C. We screened the preamplified DNA from the 2016 samples using the same methods as described for the 2013 and 2014 samples.

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 s 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 genotyped using the Life Technologies QuantStudio 12K Flex Software.

Genotypes were imported and archived in the Gene Conservation Laboratory's Oracle database, LOKI.

Laboratory Failure Rates and Quality Control

Quality control (QC) analyses were conducted to identify laboratory errors and to measure the background discrepancy rate of the genotyping process. These analyses were performed as a separate genotyping event from the original genotyping, with staff duties altered to reduce the likelihood of repeated human errors. The QC protocol consisted of re-extracting 8% of project fish and genotyping them for the same SNPs assayed in the original project. Laboratory errors found during the QC process were corrected, and genotypes were corrected in the database. Inconsistencies not attributable to laboratory error were recorded, but original genotype scores were retained in the database. 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. This QC method is the best representation of the error rate of our current genotype production. The overall failure rate was calculated by dividing the number of failed single-locus genotypes by the number of assayed single-locus genotypes. Assuming that the discrepancies among analyses were due equally to errors during original genotyping and during QC genotyping and that these analyses are unbiased, the error rate in the original genotyping was estimated as half the overall rate of discrepancies. This QC method is the best representation of the error rate of the GCL's current genotype production.

STATISTICAL ANALYSIS

Data Retrieval and Quality Control

We retrieved genotypes from LOKI and imported them into *R*[1] with the *RJDBC* package (Urbanek 2014). All subsequent analyses were performed in *R*, unless otherwise noted.

Prior to statistical analysis, we performed 3 analyses to confirm the quality of the data. First, we identified SNP markers that had only 1 allele in all baseline individuals or that had had an alternate allele that occurred in less than 1% of all genotypes in the baseline for the given marker. We considered these markers invariant and excluded them from further statistical analyses. Second, we identified individuals that were missing substantial genotypic data because they likely had poor quality DNA. We used the 80% rule (missing data at 20% or more of loci; Dann et al. 2009) to identify individuals missing substantial genotypic data. We removed these individuals from further analyses. The inclusion of individuals with poor quality DNA might introduce genotyping errors into the baseline and reduce the accuracies of MSA.

The final QC analysis 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 alleles in 100% of screened loci with genotypic data. The sample with the most missing genotypic 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.

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[1] *R* Development Core Team. 2015. *R*: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. http://www.R-project.org/.

Stock Composition Estimates

Reporting groups

Seven groups of coho salmon populations (reporting groups) selected for estimating stock compositions of commercial and OTF harvest samples (Barclay et al. 2017). These reporting groups are:

1) *Southwest CI* (West side populations south of Little Jack Creek)
2) *Northwest CI/Yentna* (West side populations from Little Jack Creek north to the Susitna River, Alexander Creek, and Yentna River)
3) *Susitna* (Susitna River mainstem populations)
4) *Knik* (Knik Arm populations and Campbell Creek)
5) *Turnagain/Northeast CI* (Turnagain Arm and northeast Cook Inlet populations)
6) *Kenai/Kasilof* (Kenai and Kasilof river populations)
7) *Southeast CI* (Kenai Peninsula populations south of the Kasilof River)

BAYES protocol

The stock composition of the fishery mixtures was estimated using the software package *BAYES* (Pella and Masuda 2001). *BAYES* employs a Bayesian algorithm to estimate the most probable contribution of the baseline populations to explain the combination of genotypes in the mixture sample. We ran 5 Markov Chain Monte Carlo chain with 40,000 iterations and discarded the first 20,000 iterations to remove the influence of starting values. Informative Dirichlet priors were defined using a similar *step-wise* prior protocol as reported in Barclay et al. (2010a), except that for the first time/area stratum within a fishery for each year, the prior parameters were the posterior means from the first time/area of the same fishery from the previous year. Prior parameters for the initial time/area stratum within a fishery were calculated using tagging data reported in Willette et al. (2003). In that study, coho salmon were tagging at the SOTF, and tagged fish were located in spawning streams in all MSA reporting groups except for the *Southwest CI* reporting group. The prior parameters were defined as the proportion of tags recovered in each reporting group weighted by the CPUE at the SOTF. CPUE is defined as the number of fish captured in 100 fathoms of fishing gear in 1 hour time fishing (Dupuis et al. 2015, 2016; Dupuis and Willette 2016.). The *Southwest CI* reporting group was assigned a prior parameter of 0.01, and the remaining 6 reporting groups prior parameters were reduced equally so that the parameters for all 7 groups summed to 1. We formed the BAYES posterior distribution for each mixture from the last 20,000 iterations of each chain for a total length of 100,000 iterations. Stock proportion estimates and the 90% credibility intervals for each mixture were calculated by taking the mean and 5% and 95% quantiles of the posterior distribution.

We assessed the within- and among-chain convergence of these estimates in BAYES using the Raftery-Lewis (within-chain) diagnostic and Gelman-Rubin (among-chain) shrink factor. These compare variation of estimates among iterations within a chain (Raftery and Lewis 1996) and within a chain to the total variation among chains (Gelman and Rubin 1992).

Total Stock-Specific Harvest and Catch per Unit Effort of Sampled Strata

Stock-specific CPUE numbers were calculated for NOTF (2013 and 2014) and SOTF (2013–2015) temporal strata. Stock-specific harvest numbers were calculated for 2013–2015 Central District Drift gillnet temporal strata and Northern District spatial strata, and the 2015 Upper

Subdistrict stratum. For the Northern District, spatial and temporal mixtures were constructed by resampling the same harvest tissue samples each year. Consequently, applying harvest numbers to estimates from both temporal and spatial strata would result in different annual Northern District harvest numbers by reporting group. To avoid conflicting harvest estimates, harvest numbers were only applied to estimates from Northern District spatial strata. We chose spatial strata over temporal strata because stock run timing is likely to vary from year to year and stocks are more likely to be present in similar proportion in a given fishing area from year to year, making harvest estimates from spatial strata a more useful tool for management purposes. Methods for applying stock composition estimates to catch to calculate total stock-specific harvest of sampled strata are the same as reported in Barclay et al. (2010a); methods for applying stock composition estimates to the OTF catch to calculate total stock specific CPUEs follow the same methods, but CPUE is used in place of harvest.

RESULTS

TISSUE SAMPLING

Offshore Test Fishery

Field sampling

Tissues suitable for genetic analysis were sampled from a total of 1212 (2013), 1128 (2014), and 402 (2015) coho salmon from the offshore test fishery harvests. Samples were collected from the NOTF July 2–30 in both 2013 and 2014 over 25 (2013) and 20 (2014) sampling days in each year (Appendix B1–B2). Samples were collected from the SOTF July 1–30, 2013, July 3–August 1, 2014, and July 1–30, 2015, over 26 (2013), 29 (2014), and 26 (2015) sampling day in each year (Appendix B3–B5).

Combining samples for analysis

Samples from the NOTF were combined to form a total of 5 spatial strata representing catches at stations 1–4, 5, and 6–7 in 2013, and 2, 3, 4, 9, 10, and 11, and 5 and 8 in 2014, and 5 temporal strata representing catches July 2–14, July 15–22, and July 23–30 in 2013, and July 2–22 and July 23–30 in 2014 (Tables 1–4; Figures 9–13).

Samples from the SOTF were combined to form a total of 10 spatial strata representing catches at stations 4&5, 6, 6.5, and 7&8 in 2013, 4&5, 6, 6.5, and 7&8 in 2014, and 4–6.5 and 7&8 in 2015 and 8 temporal strata representing catches July 1–13, July 15–22, and July 23–30 in 2013, July 3–22, July 23–26, and July 27–August 1 in 2014, and July 1–22 and July 23–30 in 2015 (Tables 5–10; Figure 9–15).

Sample sizes ranged from 112 to 259 for spatial strata and 104 to 361 for temporal strata.

Commercial Drift and Set Gillnet Fisheries

Field sampling

Tissues suitable for genetic analysis were sampled from a total of 8,613 (2013), 5,335 (2014), and 6,631 (2015) coho salmon from commercial catches throughout the UCI Central and Northern districts (area strata) in 2013–2015 (Appendix A1). These fish represented 178 individual collections.

Subsampling for analysis

Drift gillnet

Composite random samples for various temporal strata were constructed in 2013 (n=5), 2014 (n=5), and 2015 (n=4) representing 98% (2013), 93% (2014), and 95% (2015) of the drift gillnet fishery total season harvest in each year; sample sizes ranged from 375 to 692 fish per temporal stratum (Appendices A1, C1–C3). A single composite random sample of 668 fish was constructed to represent corridor-only periods from July 11 to August 8, 2015.

Set gillnet

Sampling of the set gillnet fishery in the Central District occurred in the Upper Subdistrict in 2015. A single composite random sample of 400 fish was constructed representing 98% of the 2015 Upper Subdistrict set gillnet harvest.

In the Northern District set gillnet fishery, samples were collected in all 3 years of the study from the Eastern and General subdistricts, and subsamples were selected to analyze the harvest both spatially (all temporal collections combined within spatial strata) and temporally (all spatial strata combined within temporal strata).

For the spatial analysis, samples were selected to represent harvests across the full season in the Eastern Subdistrict and the northeastern (General Subdistrict (north); stat areas 247-41, 247-42, and 247-43) and southwestern (General Subdistrict (south); stat areas 247-10, 247-20, and 247-30) portions of the General Subdistrict (Figure 1; Appendices A1, C1–C3).

In the Eastern Subdistrict, single composite random samples were constructed for 2013 (379 fish), 2014 (400 fish), and 2015 (400 fish) representing over 94%, 88% and 82% of the total season harvest in each year, respectively (Appendices A1, C1–C3).

In the General Subdistrict (north), single composite random samples were constructed for 2013 (375 fish), 2014 (400 fish), and 2015 (446 fish) representing over 99% of the total season harvest in each year. In the General Subdistrict (south), single composite random samples were constructed for 2013 (400 fish), 2014 (400 fish), and 2015 (400 fish) representing over 99% (2013), 99% (2014), and 96% (2015) of the total season harvest in each year (Appendices A1, C1–C3).

For the temporal analysis, composite random samples were constructed to represent the Northern Districtwide harvest for 4 weekly periods each year, with sample sizes ranging from 340 to 500 fish per weekly stratum (Appendix A2).

LABORATORY ANALYSIS

Laboratory Failure Rates and Quality Control

From the 2013–2015 collections, a total of 4,833 (2013), 4,622 (2014), and 5,008 (2015) fish were genotyped. Failure rates among collections ranged from 0.35% to 5.02%. Discrepancy rates were uniformly low and ranged from 0.00% to 1.68%. Assuming equal error rates in the original and the QC analyses, estimated error rates in the samples is half of the discrepancy rate (0.00–0.84%).

STATISTICAL ANALYSIS

Data Retrieval and Quality Control

Data retrieval and QC results for the baseline collections are reported in Barclay and Habicht (2012). Based upon the 80% scorable marker rule, 1.03% (2013), 1.21% (2014), and 2.10% (2015) of individuals were removed from the 2013–2015 collections before stock composition estimates were calculated.

Stock Composition Estimates

Estimates by Fishery

Northern Offshore test fishery

A total of 488 fish (2013) and 386 fish (2014) captured in the NOTF in 2013 and 2014 were genotyped for each year. Samples were grouped into 3 spatial strata in 2013 and 2 spatial strata in 2014 representing groups of stations (Tables 1 and 2; Figures 9 and 10). In 2013, from west to east Cook Inlet, the mean estimate of stock contribution of *Northwest CI/Yentna* increased slighly from 54.6% to 59.1%, *Susitna* decreased from 39.2% to 26.8%, and *Knik* increased from 4.6% to 13.7%. In 2014 from west to east, contributions of *Northwest CI/Yentna* decreased from 45.4% to 26.4%, *Susitna* decreased from 40.5% to 29.5%, and *Knik* decreased from 31.1% to 24.3%. In both years, the combined contribution of the 4 remaining reporting groups (*Southwest CI*, *Turnagain/Northeast CI*, *Kenai/Kasilof*, and *Southeast CI*) never exceeded 2.0%.

The NOTF samples were also grouped into 3 temporal strata in 2013 and 2 temporal strata in 2014 with all stations combined representing between 8 and 21 days (Tables 3 and 4; Figures 11 and 12). In the first 2 temporal strata in 2013 (July 2–14 and July 15–22), the mean estimates of contributions of the *Northwest CI/Yentna* (range*:* 47.8–48.0%), *Susitna* (range*:* 35.8–42.4%), and *Knik* (range: 9.1–15.5%) reporting groups were similar. Then, in the third temporal stratum (July 23–30), the contribution of *Northwest CI/Yentna* increased (56.5%), *Susitna* decreased (28.5%), and *Knik* (14.0%) remained steady. The combined contribution of the 4 remaining reporting groups was less than 1.1% in all 3 strata. From the first temporal stratum (July 2–22) to the second temporal stratum (July 23–30) in 2014, the contribution of *Northwest CI/Yentna* dropped slightly from 41.4% to 30.5%, the *Susitna* increased slightly from 33.3% to 41.7%, and the *Knik* remained constant from 25.1% to 25.5%. The combined contribution of the remaining 4 reporting groups was less than 2.4% in both temporal strata.

Results from all NOTF temporal strata for each year were combined to estimate total stock-specific CPUE (Tables 11 and 12; Figure 13). The total CPUE for coho salmon in 2013 was 339, of which, 99% (336) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (52%), *Susitna* (34%), and *Knik* (13%), and the remaining catch was attributed to *Turnagain/Northeast CI, Southwest CI*, *Kenai/Kasilof*, and *Southeast CI*. The total CPUE for coho salmon in 2014 was 297, of which, 98% (292) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (35%), *Susitna* (39%), and *Knik* (25%), and the remaining catch was attributed to *Turnagain/Northeast CI, Southwest CI*, *Kenai/Kasilof*, and *Southeast CI*.

Southern Offshore test fishery

From 2013 to 2015, a total of 745 (2013), 756 (2014), and 402 (2015) coho salmon captured in the SOTF were genotyped. Samples were grouped into 4 spatial strata in 2013 and 2014 and 2 spatial strata in 2015 representing groups of stations (Tables 5–7; Figures 9, 10, and 14). In 2013,

from west to east Cook Inlet, the mean estimate of contribution of *Northwest CI/Yentna* generally decreased from 67.6% to 24.3%, *Susitna* generally increased from 19.6% to 55.5%, *Knik* (range: 10.2–12.9%) remained relatively constant, and the combined contribution of the remaining reporting groups increased from 0.7% to 7.4%. Exceptions to these trends were between stations 6.5 and 6, where the *Northwest CI/Yentna* contribution increased from 37.8% to 55.3% and the *Susitna* contribution decreased from 48.6% to 31.0%. Credibility intervals for stock all stock composition estimates of *Southwest CI* (range: 0.2–2.7%), *Turnagain/Northeast CI* (range: 0.8–1.7%), *Kenai/Kasilof* (range: 0.2–2.9%), and *Southeast CI* (range: 0.2–2.3%) reporting groups included zero, except for *Kenai/Kasilof* at the easternmost stratum (stations 4 and 5), where the mean estimate was 2.9%. In 2014, from west to east Cook Inlet, the contribution of *Northwest CI/Yentna* decreased from 41.0% to 30.8% at station 6 and then increased to 39.3% at stations 4 and 5, *Susitna* (range: 22.9–37.1%) remained relatively constant for the first 3 strata then decreased at stations 4 and 5, *Knik* increased from 14.5% to 36.7%, and *Turnagain/Northeast CI* increased from 0.4% to 6.0%. The combined contribution *Southwest CI*, *Kenai/Kasilof*, and *Southeast CI* never exceeded 2.5%. In 2015, from west to east Cook Inlet, the contribution of *Northwest CI/Yentna* decreased from 37.2% to 25.3%, *Susitna* increased from 34.8% to 48.6%, and *Knik* decreased slightly from 23.4% to 22.4%. The combined contribution of the remaining reporting groups never exceeded 1%.

The SOTF samples were also grouped into 3 temporal strata in 2013 and 2014 and 2 temporal strata in 2015 representing between 4 and 19 days (Tables 8–10; Figures 11, 12, and 15). In 2013, after the first temporal stratum (July 1–13), the contributions of *Northwest CI/Yentna* (range: 27.9–54.3%) increased and *Susitna* (range: 31.5–52.5%) and *Knik* (range: 8.7–18.1%) decreased; contributions from each reporting group remained relatively constant in the second (July 15–22) and third (July 23–30) strata. Each of the remaining 4 reporting groups generally contributed less than 1%, except for *Southwest CI* (1.5%), *Turnagain/Northeast CI* (1.6%), and *Southeast CI* (3.1%) in the second stratum, and *Kenai/Kasilof* (1.6%) in the third stratum. Credibility intervals for these 4 reporting groups included zero in all 3 strata, except for *Kenai/Kasilof* in the third stratum. In 2014, the contribution of *Northwest CI/Yentna* (range: 34.2–38.9%), *Susitna* (range: 29.5–40.5%), and *Knik* (range: 22.7–25.1%) remained relatively constant over the 3 temporal strata (July 3–22, July 23–26, and July 27–August 1), except that the contribution of *Susitna* dropped from 40.5% in the second stratum to 29.5% in the third stratum. The remaining 4 reporting groups generally contributed less than 1% in each stratum, except that *Southwest CI* contributed 2.0% in the first stratum and 1.3% in the second stratum, and *Turnagain/Northeast CI* contributed 6.2% in the second stratum, and *Kenai/Kasilof* contributed 1.2% in the third stratum. Credibility intervals for these 4 reporting groups included zero in all 3 strata, except for *Southwest CI* in the first and second stratum and *Kenai/Kasilof* in the third stratum. In 2015, the contribution of *Northwest CI/Yentna* (34.2% and 35.2%), *Susitna* (36.6% and 40.5%), and *Knik* (22.7% and 25.1%) were similar between the 2 temporal strata (July 1–22 and July 23–30). *Southwest CI* contributed 2.0% to the first stratum and 1.3% to the second stratum, and the combined contribution of *Turnagain/Northeast CI*, *Kenai/Kasilof*, and *Southeast CI* was less than 1.3% in both strata.

Results from all SOTF temporal strata for each year were combined to estimate total stock-specific CPUE (Tables 11–13; Figure 13). The total CPUE for coho salmon in 2013 was 495 fish, of which 96% (477) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (50%), *Susitna* (35%), and *Knik* (11%), and the remaining catch was attributed to *Turnagain/Northeast CI, Southwest CI*, *Kenai/Kasilof*, and *Southeast CI*. The total CPUE for

coho salmon in 2014 was 655, of which 95% (626) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (36%), *Susitna* (35%), and *Knik* (24%), and the remaining catch was attributed to *Turnagain/Northeast CI, Southwest CI*, *Kenai/Kasilof*, and *Southeast CI*. The total CPUE for coho salmon in 2015 was 277, of which 97% (267) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (35%), *Susitna* (38%), and *Knik* (24%), and the remaining catch was attributed to *Turnagain/Northeast CI, Southwest CI*, *Kenai/Kasilof*, and *Southeast CI*.

Central District drift gillnet

From 2013 to 2015, a total of 2,000 (2013), 1,975 (2014), and 2,360 (2015) coho salmon harvested in the Central District drift gillnet fishery were genotyped (Appendix A1). Samples were combined to form 5 temporal strata in both 2013 and 2014 and 3 temporal strata in 2015 to represent fishing periods were the fishery was not completely restricted to the Kenai and Kasilof corridors (excluding corridor-only). In 2015, samples were combined to form an additional stratum representing corridor-only fishing periods.

In the first 4 fishing periods of 2013 (June 27–August 5), the contribution of *Southwest CI* (range: 0.0–0.3%), Northwest *CI/Yentna* (range: 43.6–55.4%), *Susitna* (range: 29.2–34.4%), and *Knik* (range: 14.2–18.5%) remained relatively constant (Appendix D1; Figure 16). Then, in the fifth fishing period (August 8–22), the contribution of *Southwest CI* increased to 7.3%, *Northwest CI/Yentna* increased to 83.5%, *Susitna* decreased to 2.7%, and *Knik* decreased to 6.4%. The contributions of *Turnagain/Northeast*, *Kenai/Kasilof*, and *Southeast CI* were less than 1% in all strata except for the July 24–30 period where *Kenai/Kasilof* contributed 2.1%, and the August 1–5 period where *Turnagain/Northeast CI* contributed 2.7% and Kenai/Kasilof contributed 1.2%; however, all but the 2 *Kenai/Kasilof* stock composition estimates had credibility intervals including zero.

In the first 4 fishing periods of 2014 (June 26–August 7), the contribution *Northwest CI/Yentna* (range: 21.7–31.4%) varied slightly, *Susitna* (range: 21.1–42.5%) and *Knik* (range: 16.3–34.2%) generally decreased, *Turnagain/Northeast* (range: 0.1–18.0%) increased, and *Kenai/Kasilof* remained below 1% for the first 3 fishing periods before increasing to 9.3% in the fourth period (Appendix D2; Figure 16). The fifth fishing period was dominated by the *Northwest/Yentna* reporting group which had a contribution of 96.9%; all other reporting groups except *Susitna* (1.9%) had contributions less than 1%. Contributions from the *Southwest CI* and *Southeast CI* reporting groups never exceeded 1% in all 5 periods. All stock composition estimates below 2% had lower credibility intervals below 0.1%.

From early to late fishing periods in 2015 (excluding corridor-only; June 29–August 24), the contribution of *Northwest CI/Yentna* (range: 34.2–53.4%) increased, *Susitna* (range: 18.3–33%) and *Knik* (range: 12.2–29.1%) decreased, and *Turnagain/Northeast CI* (range: 0.3–7.0%), *Kenai/Kasilof* (range: 0.0–7.1%), and *Southeast CI* (range: 0.0–1.9%) generally increased (Appendix D3; Figure 16). The contribution of *Southwest CI* was less than 1% in all strata.

In the 2015 corridor-only stratum (July 11–August 5), the *Northwest CI/Yentna* (39.6%), *Susitna* (24.3%), and *Knik* (26.9%) reporting groups made up the majority of the harvest, with smaller contributions from the *Turnagain/Northeast* (6.5%) and *Kenai/Kasilof* (2.6%) reporting groups (Appendix D4; Figure 17). The *Southwest CI* and *Southeast CI* reporting groups contributed less than 1%, and had credibility intervals including zero.

Northern District set gillnet

From 2013 to 2015, a total of 1,600 (2013), 1,537 (2014), and 1851 (2015) coho salmon harvested in the Northern District set gillnet fishery were genotyped. Samples were combined to form temporal strata representing the entire Northern District for four 8-day periods for each of the 3 years (Appendix A2). A portion of the samples used to represent Northern District temporal strata were subsampled and recombined to create spatial strata representing the Eastern Subdistrict, General Subdistrict (south), and General Subdistrict (north) in 2013, 2014, 2015 (Appendix A1).

The stock composition estimates for the Northern District temporal strata revealed similar stock composition patterns among years with *Northwest CI/Yentna*, *Susitna*, *Knik*, and *Turnagain/Northeast CI* reporting groups contributing to the majority of the harvest (Appendix E1–E3; Figure 18). In general, the stock compositions over the 4 strata decreased for the *Northwest CI/Yentna*, *Susitna*, and *Knik* reporting groups and increased for *Turnagain/Northeast CI* reporting group in each year. Additionally, the *Kenai/Kasilof* reporting group never contributed greater than 1% to the harvest except in the fourth time stratum in each year and *Southwest CI* and *Southeast CI* reporting groups always contributed less than 1% in any stratum.

The first stratum (third week of July) was dominated by nearly equal contributions from *Northwest CI/Yentna* (46.0%) and *Susitna* (51.0%) in 2013, *Northwest CI/Yentna* (29.0%), *Susitna* (34.1%), and *Knik* (34.3%) in 2014, and *Northwest CI/Yentna* (39.1%), *Susitna* (25.6%), and *Knik* (33.1%) in 2015. The stock composition estimates for the second stratum (fourth week of July) in all 3 years were very similar, where contributions ranged from 30.5% to 38.5% for *Northwest CI/Yentna*, 11.5% to 18.7% for *Susitna*, 37.0% to 41.3% for *Knik*, and 8.6% to 12.5% for *Turnagain/Northeast CI* reporting groups; the remaining reporting groups contributed less than 1%. The third stratum (first week of August) had no discernable pattern over the 3 years; contributions ranged from 27.6% to 49.0% for *Northwest CI/Yentna*, 17.2% to 27.4% for *Susitna*, 22.0% to 36.3% for *Knik*, and 8.9% to 18.3% for *Turnagain/Northeast CI* reporting groups. The remaining reporting groups contributed less than 1%. In the fourth stratum (second week of August), *Turnagain/Northeast CI* (range: 43.8–65.7%) was the largest contributor to the harvest followed by *Northwest CI/Yentna* (range: 17.1–27.8%) in all 3 years. The *Knik* (range: 7.9–23.1%) and *Susitna* (range: 2.6–10.3%) reporting groups were the next largest contributors the fourth stratum; however, in 2014 and 2015, Susitna contributed less than 3.3% to the harvest and had credibility intervals that included zero. The fourth stratum was the only harvest period in all 3 years, where the *Kenai/Kasilof* reporting group (range: 1.7–5.3%) contributed over 1% to the harvest.

In the analysis of Northern District samples by spatial strata (areas), each stratum was dominated by the same reporting group or groups in all 3 years (Appendix F1–F3, Figure 19). In the General Subdistrict (south), *Northwest CI/Yentna* (range: 57.1–63.6%) was the largest contributor, followed by *Susitna* (range: 28.6–42.3%) in all 3 years. The only other reporting group to contribute greater than 1% to the harvest in this area was *Knik* (range: 0.1–6.4%); however, this only occurred in 2013 and 2015. In the northeastern portion of the General Subdistrict (north), *Knik* (range: 62.3–81.5%) was the largest contributor to the harvest, followed by *Northwest CI/Yentna* (range: 8.8–23.8%) in all three years. *Susitna* (range: 1.9–11.1%) and *Turnagain/Northeast CI* (range: 0.9–7.6%) were the only other reporting groups that had stock composition estimates over 1% in this area; however, the credibility intervals for these estimates included zero except for *Susitna* in 2013. In the Eastern Subdistrict, *Turnagain/Northeast CI*

(range: 60.8–72.8%) was the largest contributor to the harvest in all years, and the combined contribution of *Northwest CI/Yentna* (range: 8.2–19.4%), *Susitna* (range: 1.7–11.7%), *Knik* (range: 4.7–12.7%), and *Kenai/Kasilof* (range: 1.7–3.4%) made up the remaining 27.1–39.2% of the harvest in each year.

Upper Subdistrict set gillnet

A total of 400 coho salmon harvested in the Upper Subdistrict (Central District) set gillnet fishery were genotyped, representing harvests from July 20 to August 10 in 2015 (Appendix A1). The largest contributor to the harvest was *Kenai/Kasilof* (29.6%), followed by *Knik* (23.0%), and the remaining harvest was composed of fairly equal contributions from *Northwest CI/Yentna* (17.1%), *Susitna* (17.0%), and *Turnagain/Northeast CI* (13.3%; Appendix G1; Figure 20).

Estimates by Reporting Group

This section summarizes the stock composition and harvest estimates by reporting group for mixtures of coho salmon harvested in the 2013–2015 Central District drift (14 strata), Northern District set (9 strata), and Upper Subdistrict set (1 stratum) gillnet fisheries for a total of 24 strata. Northern District temporal strata are not included in this summary by stock because stock-specific harvests were not calculated for those strata. Harvest numbers in this summary only include harvests from analyzed strata; the Central District drift gillnet fishery and the Eastern and General Subdistricts of the Northern District set gillnet fishery were analyzed in all 3 years and the Upper Subdistrict was only analyzed in 2015 (Appendix A1, C1-C3). Analyzed strata represent 86% (2013), 77% (2014), and 86% (2015) of the total UCI commercial coho salmon harvest (Table 14).

Southwest CI

Southwest CI fish constituted greater than 5% of a mixture in 1 of the 24 strata analyzed. In all 3 years, over 99% of the harvest of *Southwest CI* fish occurred within the Central District drift gillnet fishery, with less than 1% occurring in each of the remaining fishing areas (Figures 21–23). Of the sampled UCI commercial coho salmon harvest in 2013–2015, *Southwest CI* fish amounted to 1% (1,529 fish) in 2013, less than 1% (144 fish) in 2014, and less than 1% (143 fish) in 2015 (Table 14).

Northwest CI/Yentna

Northwest CI/Yentna fish constituted greater than 5% of a mixture in all 24 strata analyzed. In 2013, when overall *Northwest CI/Yentna* harvest was the highest, 85% of the harvest of *Northwest CI/Yentna* fish occurred within the Central District drift gillnet fishery, 10% occurred within the General Subdistrict (south), and the remaining harvest was split between the Eastern Subdistrict and General Subdistrict (north; Figure 21). In 2014, 71% of the harvest of *Northwest CI/Yentna* fish occurred within the Central District drift gillnet fishery, 23% occurred within the General Subdistrict (south), and the remaining harvest occurred within the Eastern Subdistrict and General Subdistrict (north; Figure 22). In 2015, when additional strata were analyzed, 60% of the harvest of *Northwest CI/Yentna* fish occurred within the Central District drift gillnet fishery (excluding corridor-only periods), 18% occurred within the General Subdistrict (south), 15% occurred within the Central District drift gillnet fishery during corridor-only periods, and the remaining harvest occurred within the Upper Subdistrict, Eastern Subdistrict, and General Subdistrict (north; Figure 23). Of the sampled UCI commercial coho salmon harvest in 2013–

2015, *Northwest CI/Yentna* fish were the largest contributors each year, amounting to 49% (109,965 fish) in 2013, 31% (32,420 fish) in 2014, and 39% (72,500 fish) in 2015 (Table 14).

Susitna

Susitna fish constituted greater than 5% of a mixture in 20 of the 24 strata analyzed. In 2013, when overall *Susitna* harvest was the highest of the 3 years, 84% of the harvest of *Susitna* fish occurred within the Central District drift gillnet fishery, 12% occurred within the General Subdistrict (south), and the remaining harvest was split between the Eastern Subdistrict and General Subdistrict (north; Figure 21). In 2014, 77% of the harvest of *Susitna* fish occurred within the Central District drift gillnet fishery, 19% occurred within the General Subdistrict (south), and the remaining harvest occurred within the Eastern Subdistrict and General Subdistrict (north; Figure 22). In 2015, when additional strata were analyzed, 60% of the harvest of *Susitna* fish occurred within the Central District drift gillnet fishery (excluding corridor-only periods), 14% occurred within the General Subdistrict (south), 16% occurred within the Central District drift gillnet fishery during corridor-only periods, 7% occurred within the Upper Subdistrict, and the remaining harvest occurred within the Eastern Subdistrict, and General Subdistrict (north; Figure 23). Of the sampled UCI commercial coho salmon harvest in 2013–2015, *Susitna* fish amounted to 29% (64,530 fish) in 2013, 28% (29,725 fish) in 2014, and 23% (41,608 fish) in 2015 (Table 14).

Knik

Knik fish constituted greater than 5% of a mixture in 20 of the 24 strata analyzed. In 2013, 77% of the harvest of *Knik* fish occurred within the Central District drift gillnet fishery, 19% occurred within the General Subdistrict (north), and the remaining harvest was split between the Eastern Subdistrict and General Subdistrict (south; Figure 21). In 2014, 64% of the harvest of *Knik* fish occurred within the Central District drift gillnet fishery, 34% occurred within the General Subdistrict (north), and the remaining harvest occurred within the Eastern Subdistrict and General Subdistrict (south; Figure 22). In 2015, when additional strata were analyzed, 48% of the harvest of *Knik* fish occurred within the Central District drift gillnet fishery (excluding corridor-only periods), 19% occurred within the General Subdistrict (north), 17% occurred within the Central District drift gillnet fishery during corridor-only periods, 9% occurred within the Upper Subdistrict, and the remaining occurred in the Eastern Subdistrict and General Subdistrict (south; Figure 23). Of the sampled UCI commercial coho salmon harvest in 2013–2015, *Knik* fish amounted to 16% (36,279 fish) in 2013, 25% (26,530 fish) in 2014, and 24% (43,799 fish) in 2015 (Table 14).

Turnagain/Northeast CI

Turnagain/Northeast CI fish constituted greater than 5% of a mixture in 10 of the 24 strata analyzed. In 2013, 76% of the harvest of *Turnagain/Northeast CI* fish occurred within the Eastern Subdistrict, 20% occurred within the Central District drift gillnet fishery, and the remaining occurred in the General Subdistrict (north) and General Subdistrict (south; Figure 21). In 2014, 48% of the harvest of *Turnagain/Northeast CI* fish occurred within the Eastern Subdistrict, 46% occurred within the Central District drift gillnet fishery, 6% occurred in the General Subdistrict (north), and the remaining occurred in the General Subdistrict (south; Figure 22). In 2015, when additional strata were analyzed, 53% of the harvest of *Turnagain/Northeast CI* fish occurred within the Eastern Subdistrict, 20% occurred within the Central District drift gillnet fishery (excluding corridor-only periods), 14% occurred in the Upper Subdistrict, 11%

occurred within the Central District drift gillnet fishery during corridor-only periods, and the remaining harvest occurred within General Subdistrict (north) and General Subdistrict (south; Figure 23). Of the sampled UCI commercial coho salmon harvest in 2013–2015, *Turnagain/Northeast CI* fish amounted to 4% (8,918 fish) in 2013, 14% (14,318 fish) in 2014, and 9% (16,669 fish) in 2015 (Table 14).

Kenai/Kasilof

Kenai/Kasilof fish constituted greater than 5% of a mixture in 3 of the 24 strata analyzed. In 2013, 80% of the harvest of *Kenai/Kasilof* fish occurred within the Central District drift gillnet fishery, 20% occurred within the Eastern Subdistrict, and less than 1% occurred in both the General Subdistrict (south) and General Subdistrict (north; Figure 21). In 2014, 89% of the harvest of *Kenai/Kasilof* fish occurred within the Central District drift gillnet fishery, 10% occurred within the Eastern Subdistrict, and the remaining occurred in the General Subdistrict (south) and General Subdistrict (north; Figure 22). In 2015, when additional strata were analyzed, 57% of the harvest of *Kenai/Kasilof* fish occurred within the Upper Subdistrict, 31% occurred within the Central District drift gillnet fishery (excluding corridor-only periods), and the remaining occurred within the Central District drift gillnet fishery during corridor-only periods, General Subdistrict (south) and General Subdistrict (north; Figure 23). Of the sampled UCI commercial coho salmon harvest in 2013–2015, *Kenai/Kasilof* fish amounted to 1% (1,927 fish) in 2013, 2% (2,117 fish) in 2014, and 5% (9,043 fish) in 2015 (Table 14).

Southeast CI

Southeast CI fish did not constitute greater than 5% of a mixture in any of the 24 strata analyzed. In 2013, over 99% of the harvest of *Southeast CI* fish occurred within the Central District drift gillnet fishery and less than 1% occurred in each of the remaining fishing areas (Figure 21). In 2014, 60% of the harvest of *Southeast CI* fish occurred within the Eastern Subdistrict and 40% occurred in the Central District drift gillnet fishery, and almost no harvest of *Southeast CI* occurred in each of the remaining fishing areas (Figure 22). In 2015, when additional strata were analyzed, over 99% of the harvest of *Southeast CI* fish occurred within the Central District drift gillnet fishery (excluding corridor-only periods) and less than 1% occurred in the remaining fishing areas (Figure 23). Overall, *Southeast CI* fish amounted to less than 1% of the sampled UCI commercial coho salmon harvest in 2013 (459 fish), 2014 (13 fish), and 2015 (971 fish; Table 14).

Total Stock-Specific Harvest of Sampled Strata

Results from all spatiotemporal strata for each year were combined to estimate total UCI commercial fishery stock composition and stock-specific harvest summaries for sampled areas and time periods (Tables 15–17). While these estimates represent the majority of the coho salmon harvest in UCI during periods of active sockeye salmon management, they do not include harvests from some early and late periods or fishing areas outside of the sampling plan (the Kasilof River Special Harvest Area (drift and set gillnet); the Western, Kustatan, Kalgin Island, and Chinitna Bay (drift and set gillnet) subdistricts; and the Upper Subdistrict in 2013 and 2014). Total harvests from unsampled fishing periods and areas are provided in Table 14–17 beneath the stock-specific harvest estimates for each year.

Central District drift gillnet

In 2013, the total Central District drift gillnet coho salmon harvest from fishing periods sampled was 181,818 fish, representing 98% of the total drift fishery harvest for 2013 (Table 15; Figure 24). Of this coho salmon harvest, 97% (176,489 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (52%), *Susitna* (30%), and *Knik* (15%), and the remaining harvest (5,329 fish) was attributed to *Turnagain/Northeast CI*, *Southwest CI*, *Kenai/Kasilof*, and *Southeast CI* reporting groups.

In 2014, the total Central District drift gillnet coho salmon harvest from fishing periods sampled was 71,441 fish, representing 93% of the total drift fishery harvest for 2014 (Table 16; Figure 24). Of this coho salmon harvest, 97% (69,412 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (32%), *Susitna* (32%), *Knik* (24%), and *Turnagain/Northeast CI* (9%), and the remaining harvest (2,029 fish) was attributed to *Southwest CI*, *Kenai/Kasilof*, and *Southeast CI* reporting groups.

In 2015, the total Central District drift gillnet (excluding corridor-only periods) coho salmon harvest from fishing periods sampled was 96,681 fish, representing 94% of the total drift fishery (excluding corridor-only periods) harvest for 2015 (Table 17; Figure 24). Of this coho salmon harvest, 92% (89,376 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (45%), *Susitna* (26%), and *Knik* (22%), and the remaining harvest (7,305 fish) was attributed to *Turnagain/Northeast CI, Southwest CI*, *Kenai/Kasilof*, and *Southeast CI* reporting groups.

In 2015, corridor-only fishing periods were sampled to form a single stratum representing 98% (27,405 fish) of the corridor-only drift gillnet fishery harvest for 2015 (Table 17; Figure 17). Of this coho salmon harvest, 97% (26,688 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (40%), *Susitna* (24%), *Knik* (27%), and *Turnagain/Northeast CI* (7%), and the remaining harvest (717 fish) was attributed to *Southwest CI*, *Kenai/Kasilof*, and *Southeast CI* reporting groups.

Northern District, Eastern and General subdistricts set gillnet

In 2013, the total Northern District set gillnet coho salmon harvest from fishing periods sampled was 41,789 fish, representing 99% of the total Northern District harvest for 2013 (Table 15; Figure 25). Of this coho salmon harvest, 99% (41,400 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (38%), *Susitna* (24%), *Knik* (20%), and *Turnagain/Northeast CI* (17%), and the remaining harvest (389 fish) was attributed to *Southwest CI*, *Kenai/Kasilof*, and *Southeast CI* reporting groups.

In 2014, the total Northern District set gillnet coho salmon harvest from fishing periods sampled was 33,825 fish, representing 96% of the total Northern District harvest for 2014 (Table 16; Figure 25). Of this coho salmon harvest, 99% (33,580 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (28%), *Susitna* (20%), *Knik* (29%), and *Turnagain/Northeast CI* (23%), and the remaining harvest (245 fish) was attributed to *Southwest CI*, *Kenai/Kasilof*, and *Southeast CI* reporting groups.

In 2015, the total Northern District set gillnet coho salmon harvest from fishing periods sampled was 43,130 fish, representing 93% of the total Northern District harvest for 2015 (Table 17; Figure 25). Of this coho salmon harvest, 99% (42,817 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (36%), *Susitna* (16%), *Knik* (26%), and

Turnagain/Northeast CI (21%), and the remaining harvest (313 fish) was attributed to *Southwest CI*, *Kenai/Kasilof*, and *Southeast CI* reporting groups.

Central District, Upper Subdistrict set gillnet

In 2015, the Upper Subdistrict was sampled to form a single stratum representing 98% (17,517 fish) of the Upper Subdistrict set gillnet harvest for 2015 (Table 17; Figure 20). Of this coho salmon harvest, 70% (12,322 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (17%), *Susitna* (17%), *Knik* (23%), and *Turnagain/Northeast CI* (13%), and the remaining 30% (5,195 fish) was almost entirely attributed to the *Kenai/Kasilof* reporting group.

All strata combined

In 2013, the total UCI commercial coho salmon harvest from fishing areas and periods sampled was 223,607 fish, representing 86% of the total UCI commercial harvest for 2013 (Table 14; Figure 26). Of this coho salmon harvest, 94% (210,775 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (49%), *Susitna* (29%), and *Knik* (16%), and the remaining harvest (12,832 fish) was attributed to *Turnagain/Northeast CI, Southwest CI*, *Kenai/Kasilof*, and *Southeast CI*.

In 2014, the total UCI commercial coho salmon harvest from fishing areas and periods sampled was 105,266 fish, representing 77% of the total UCI commercial harvest for 2014 (Table 14; Figure 26). Of this coho salmon harvest, 98% (102,992 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (31%), *Susitna* (28%), *Knik* (25%), and *Turnagain/Northeast CI* (14%), and the remaining harvest (2,274 fish) was attributed to *Southwest CI*, *Kenai/Kasilof*, and *Southeast CI*.

In 2015, the total UCI commercial coho salmon harvest from fishing areas and periods sampled was 184,733 fish, representing 86% of the total UCI commercial harvest for 2015 (Table 14; Figure 26). Of this coho salmon harvest, 95% (174,576 fish) was attributed to northern Cook Inlet reporting groups *Northwest CI/Yentna* (39%), *Susitna* (23%), *Knik* (24%), and *Turnagain/Northeast CI* (9%), and the remaining harvest (10,157 fish) was attributed to *Southwest CI*, *Kenai/Kasilof*, and *Southeast CI*.

DISCUSSION

This report used genetic data from the southern and northern OTFs and the Central and Northern district commercial fisheries to estimate the stock compositions of coho salmon harvests in 2013–2015. Here we evaluate temporal and spatial stock-specific harvest patterns and their utility for harvest management, as well as other management applications of these data for estimating harvest rates and developing brood tables

COEFFICIENT OF VARIATION ACROSS STOCKS

As expected, the coefficient of variation (CV) of stock-specific harvest estimates in mixtures were generally smaller for stocks with large contributions and were larger for stocks with low contributions (Tables 14–17). For example, CVs of harvest estimates for the dominant *Northwest CI/Yentna* reporting group ranged 5–7%; whereas, CVs of harvest estimates for the minor *Southeast CI* reporting group ranged 32–321% (Table 14).

ACCOUNTING FOR UNSAMPLED AND UNREPRESENTED STRATA

In 2013–2014, our operational plan specified sampling only the Central District drift gillnet and Northern District set gillnet fishery harvests. Despite efforts to sample all strata, a small number of targeted strata were not sampled due to logistical reasons or because the strata represented small harvests. Unrepresented drift gillnet fishery harvests were 2% of total drift fishery harvests in 2013 and 7% in 2014, and unrepresented Northern District set gillnet fishery harvests were 1% of total Northern District set gillnet fishery harvests in 2013 and 4% in 2014 (Tables 15 and 16). Unrepresented total fishery harvests were 14% of total fishery harvests in 2013 and 23% in 2014 (Table 14). In 2015, we added limited sampling of Central District drift gillnet (corridor-only periods) and Upper Subdistrict set gillnet fishery harvests. In 2015, 14% of total fishery harvests were unrepresented including 6% of drift fishery harvests (excluding corridor-only periods), 2% of drift gillnet fishery harvests (corridor-only periods), 2% of Upper Subdistrict set gillnet harvests, and 7% of Northern District set gillnet harvests (Tables 14 and 17). A higher fraction of Upper Subdistrict set gillnet harvests were unrepresented due to difficulties obtaining samples of coho salmon when they were in low abundance and mixed with sockeye salmon. A higher fraction of Northern District set gillnet harvests were unrepresented due to difficulties obtaining samples of coho salmon where it was difficult to locate individual fishermen delivering fish in Anchorage. Due to the differences in sampling over the years of this study, caution should be taken when interpreting estimates among sampling years—specifically overall stratified estimates for years with different spatial strata (i.e., 2013 and 2014 vs. 2015).

STOCK-SPECIFIC HARVEST PATTERNS

Spatial patterns of stock-specific coho salmon harvests in the southern and northern OTFs were not consistent among years. Harvests of *Northwest CI/Yentna* coho salmon were higher along the west side of the southern OTF transect in 2013–2015, and this pattern was consistent along the northern OTF transect in 2014 but not 2013 (Figures 9, 10, and 14). Harvests of *Susitna* coho salmon were higher along the east side of the northern OTF transect in 2014 and the east side of the southern OTF transect in 2015 (Figures 10 and 14), but harvests of this stock exhibited no spatial pattern along either transect in 2013 (Figure 9). Adult salmon often use olfactory cues to determine their migratory pathway during the later portion of their inshore migration (Hasler and Scholz 1983, Sturlaugsson et al. 2009), which can result in stocks orienting toward water masses originating from their home stream. Dupuis and Willette (2015) described a low salinity surface layer along the east side of Kalgin Island that likely originated from the Susitna River and other streams flowing into northern Cook Inlet. Higher catches of *Northwest CI/Yentna* coho salmon at stations 5 and 8 in 2014 may have been related to the presence of this low salinity surface layer. Additional years of data will be needed to develop an understanding of coho salmon migratory behavior in relation to ocean conditions in UCI.

Temporal patterns of stock-specific coho salmon harvests in the southern and northern OTFs also were not consistent among years. In 2013, both southern and northern OTF harvests of *Susitna*, *Northwest CI/Yentna,* and *Knik* reporting groups increased during July (Figure 11). A similar pattern was observed in northern OTF harvests in 2014, but not in 2014 or 2015 southern OTF harvests (Figures 12 and 15). The pattern of later run timing along the northern OTF transect compared to the southern OTF transect in 2014 could have resulted if coho salmon migration slowed between the two transects. Willette et al. (2010) found that sockeye salmon migration rate between the southern OTF and inshore commercial fisheries was positively related to surface

ocean temperatures measured along the southern OTF transect. Average southern OTF ocean temperatures were about 0.9°C warmer in 2014 than in 2013 (Dupuis et al. 2015); additional years of data will be needed to develop an understanding of coho salmon migration rates in UCI.

When temporal strata for the northern and southern OTFs were combined to produce overall CPUE estimates for each year, we observed similar stock proportions between the 2 transects within years (Tables 11 and 12; Figure 13). Stock compositions between the 2 transects differed from 0% to 2% in 2013 and 0% to 3% in 2014. Given the correlation between these 2 transects within years, sampling 1 transect should be adequate to obtain relative run strengths among coho salmon stocks.

Drift fishery weekly harvests (excluding corridor-only periods) of coho salmon were highest between July 17 and August 7 in 2013–2015 (Figure 16). Harvests of *Susitna* and *Knik* decreased in August in 2013 and 2014, and to a lesser extent in 2015, while proportions of *Northwest CI/Yentna* coho salmon increased in August for 2013–2015. Increases in proportions of *Northwest CI/Yentna* coho salmon in August were affected by the timing of restrictions of the drift fishery to the west side of Cook Inlet (i.e., beginning August 15, 2013; August 11, 2014; and August 15, 2015; Shields and Dupuis 2013, 2015, and 2016). A single drift fishery (corridor-only periods) sample collected in 2015 indicated no substantial difference in stock composition compared to drift fishery harvests excluding corridor-only periods for the same approximate date period, except for a small increase in harvests of *Turnagain/Northeast CI* and *Kenai/Kasilof* coho salmon (Figures 16 and 17). A single Upper Subdistrict set gillnet sample collected in 2015 indicated a much higher fraction of *Turnagain/Northeast CI* and *Kenai/Kasilof* coho salmon, but the number of coho salmon harvested was lower than in the drift fishery (Figure 20).

After about August 12 in 2013–2015, Northern District set gillnet harvests of *Northwest CI/Yentna*, *Susitna*, and *Knik* coho salmon decreased, and harvests of *Turnagain/Northeast CI* coho salmon increased (Figure 18). Willette et al. (2003) also found that run timing of Turnagain Arm coho salmon was later than Susitna River and Knik Arm stocks.

We found consistent spatial patterns of stock-specific coho salmon harvests in the Northern District set gillnet fishery. In 2013–2015, General Subdistrict (south) harvests were dominated by *Susitna* and to a lesser extent *Northwest CI/Yentna* coho salmon, and General Subdistrict (north) harvests were dominated by *Knik* coho salmon (Figure 19). In 2013–2015, Eastern Subdistrict harvests were dominated by *Turnagain/Northeast CI* coho salmon. These patterns indicate that these stocks are generally harvested in relative close proximity to their home streams. This information will be useful for managers seeking to reduce harvests on specific stocks to achieve escapement goals.

SUSITNA COHO SALMON HARVEST RATES AND RETURN PER SPAWNER

Using our stock-specific commercial fishery harvest estimates, we can calculate approximate commercial fishery harvest rates and return per spawner for Susitna River coho salmon because escapement estimates are available for this stock. Coho salmon abundances in the mainstem Susitna River above the Yentna River confluence were 130,026 in 2013, 84,879 in 2014 (LGL et al. 2014, 2015) and 152,500 in 2015 (http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2016-2017/uci/AR08.pdf). Given the estimated harvests of Susitna River coho salmon in commercial fisheries (Tables 15–17), approximate drift gillnet fishery harvest rates were 28% in 2013, 20% in 2014 and 16% in 2015. Harvest rates in Northern District set gillnet fisheries were 5% in 2013, 6% in 2014 and 2% in 2015, and the harvest rate in the Upper Subdistrict set gillnet fishery was 2% in 2015. Our estimates of total run size do not account for other marine

harvests of Susitna coho salmon, but these are relatively small and would not substantially increase total run estimates. These drift fishery harvest rate estimates are lower than expected based on a drift fishery effort model derived using coho salmon coded-wire tag data—i.e., 34% in 2013, 28% in 2014 and 29% in 2015 (Willette et al. 2003). Lower than expected harvest rates may be a result of differences between Susitna coho salmon run timing versus the timing of drift fishery openings, fishery area restrictions or lower coho salmon catchabilities resulting from warmer ocean temperatures in UCI in recent years that appear to cause salmon to swim deeper in the water column. Overall Susitna coho salmon harvest rates (including inriver sport harvests) were 41% in 2013, 38% in 2014, and 28% in 2015. These harvest rates are below the average optimum harvest rate (77%) for maximum sustained yield of coho salmon (Chapman 1986) and slightly below harvest rate ranges (41–62%) reported for 7 coho salmon stocks in southeast Alaska (Shaul et al. 2011). We also estimated that adult returns per spawner were approximately 2.1 for brood year 2010 and 1.6 for brood year 2011. These estimates were based upon inriver runs of 73,640 in 2010 and 131,878 in 2011 (Cleary et al. 2013), inriver sport harvests of 18,625 in 2010 and 10,211 in 2011 and assuming approximately 85% of Susitna coho salmon are age 2.1 (Tobias et al. 2013). For comparison, these returns per spawner were lower than optimum return per spawners for Hugh Smith (3.7) and Ford Arm Creek (3.6) coho salmon in southeast Alaska (Shaul et al. 2011).

BROOD TABLE DEVELOPMENT

Brood tables have not been developed for any coho salmon stock in UCI due to a lack of commercial harvest and escapement estimates for the same stocks. At this time, Susitna coho salmon is the only UCI stock that can be identified using genetic MSA; escapements can also be estimated using mark–recapture methods. Prior to 2006, the stock compositions of sockeye salmon commercial harvests were estimated using a weighted age composition model (Tobias and Willette 2013) that requires estimates of escapements and age compositions for all major stocks. These data are not available for coho salmon in part due to the large number of small streams where coho salmon spawn in UCI. As a result, genetic MSA is likely the only practical method for estimating coho salmon stock composition in commercial harvests. Developing brood tables for major coho salmon stocks will require estimating escapements and commercial harvest stock compositions for many years into the future. This effort would provide for developing coho salmon escapement goals using spawner–recruit analysis and annual run forecasts.

MAKING INFERENCES OUTSIDE THE STUDY YEARS

Like most other scientific studies, these analyses represent environmental and fishery conditions during a specific period of time. Nonetheless, these studies are conducted so that future scientific and regulatory activities may be better informed. We expect that these results will be cited in the future as the most comprehensive data set available to examine stock composition of coho salmon captured in the Upper Cook Inlet commercial fishery. However, while this 3-year data set provides some measure of interannual variability in stock composition, some caution must be exercised when extrapolating the results to years not analyzed because changes in relative abundance among reporting groups, prosecution of fisheries, or migratory behavior due to ocean conditions might affect the distribution of stock-specific harvests among fisheries.

Additional samples were collected in 2016 under a new project funded by the Matanuska-Susitna Borough, adding an additional year of data to the data set reported here; a report on the analysis of those samples is scheduled for release in fall of 2017.

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TABLES AND FIGURES

Table 1.–Stock composition (%) and stock-specific catch per unit effort (CPUE) estimates, including mean, standard deviations (SD), 90% credibility intervals (CI), and sample size (n) for **spatially grouped mixtures** (Stations) of Coho salmon captured in the **northern offshore test fishery in 2013**. See Appendix B1 for individual CPUEs by station and date.

			Stock composition				Stock-specific CPUE					
			Within station				Within station					Within year
					90% CI				90% CI			
Station	n	Reporting Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
1, 2, 3, and 4	1	*Southwest CI*	0.0	0.1	0.0	0.0		0	0	0	0	0.0
		Northwest CI/Yentna	59.1	8.6	44.7	73.0		82	12	62	102	24.2
		Susitna	26.8	8.6	13.1	41.3		37	12	18	58	11.0
		Knik	13.7	4.2	7.3	21.0		19	6	10	29	5.6
		Turnagain/Northeast CI	0.3	1.2	0.0	2.3		0	2	0	3	0.1
		Kenai/Kasilof	0.1	0.5	0.0	0.9		0	1	0	1	0.1
		Southeast CI	0.0	0.2	0.0	0.0		0	0	0	0	0.0
							CPUE	139				
5	1	*Southwest CI*	0.1	0.4	0.0	0.0		0	0	0	0	0.0
		Northwest CI/Yentna	54.8	8.7	40.0	68.7		52	8	38	65	15.3
		Susitna	37.8	7.9	25.4	51.4		36	7	24	49	10.6
		Knik	7.2	5.3	0.1	17.0		7	5	0	16	2.0
		Turnagain/Northeast CI	0.1	0.6	0.0	0.8		0	1	0	1	0.0
		Kenai/Kasilof	0.0	0.1	0.0	0.1		0	0	0	0	0.0
		Southeast CI	0.0	0.2	0.0	0.0		0	0	0	0	0.0
							CPUE	95				
6 and 7	1	*Southwest CI*	0.1	0.4	0.0	0.7		0	0	0	1	0.0
		Northwest CI/Yentna	54.6	10.2	37.4	70.9		57	11	39	75	16.9
		Susitna	39.2	10.4	22.8	56.8		41	11	24	60	12.2
		Knik	4.6	5.1	0.0	15.7		5	5	0	16	1.4
		Turnagain/Northeast CI	1.4	2.8	0.0	7.9		1	3	0	8	0.4
		Kenai/Kasilof	0.1	0.4	0.0	0.2		0	0	0	0	0.0
		Southeast CI	0.1	0.4	0.0	0.6		0	0	0	1	0.0
							CPUE	105				
							Total	339				

Note: n is the final number of samples used in genetic analyses. Proportions for a given mixture may not sum to 1 due to rounding error.

Table 2.–Stock composition (%) and stock-specific catch per unit effort (CPUE) estimates, including mean, standard deviations (SD), 90% credibility intervals (CI), and sample size (n) for **spatially grouped mixtures** (Stations) of Coho salmon captured in the **northern offshore test fishery in 2014**. See Appendix B2 for individual CPUEs by station and date.

			Stock composition				Stock-specific CPUE					
			Within station				Within station					Within year
		Reporting			90% CI				90% CI		
Station	n	Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
2, 3, 4, 9, 10 and 11	205	*Southwest CI*	0.0	0.1	0.0	0.0		0	0	0	0	0.0
		Northwest CI/Yentna	26.4	7.4	14.6	39.0		41	12	23	61	13.8
		Susitna	40.5	7.4	28.4	52.8		63	11	44	82	21.2
		Knik	31.1	5.3	22.6	40.0		48	8	35	62	16.3
		Turnagain/Northeast CI	1.4	1.8	0.0	5.1		2	3	0	8	0.7
		Kenai/Kasilof	0.5	0.5	0.0	1.6		1	1	0	2	0.3
		Southeast CI	0.0	0.1	0.0	0.0		0	0	0	0	0.0
							CPUE	155				
5 and 8	173	*Southwest CI*	0.0	0.2	0.0	0.0		0	0	0	0	0.0
		Northwest CI/Yentna	45.4	9.6	29.7	61.4		64	14	42	87	21.7
		Susitna	29.5	9.2	14.3	44.8		42	13	20	63	14.1
		Knik	24.3	6.8	13.6	36.1		34	10	19	51	11.6
		Turnagain/Northeast CI	0.7	2.3	0.0	5.0		1	3	0	7	0.3
		Kenai/Kasilof	0.1	0.3	0.0	0.3		0	0	0	0	0.0
		Southeast CI	0.0	0.1	0.0	0.0		0	0	0	0	0.0
							CPUE	142				
							Total CPUE	297				

Note: n is the final number of samples used in genetic analyses. Proportions for a given mixture may not sum to 1 due to rounding error.

Table 3.–Stock composition (%) and stock-specific catch per unit effort (CPUE) estimates, including mean, standard deviations (SD), 90% credibility intervals (CI), and sample size (n) for **temporally grouped mixtures** (Date ranges) of coho salmon captured in the **northern offshore test fishery in 2013**. See Appendix B1 for individual CPUEs by station and date.

			Stock composition					Stock-specific CPUE				
			Within date range					Within date range				Within year
Date		Reporting			90% CI					90% CI		
Range	n	Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
7/2–14	132	*Southwest CI*	0.2	0.7	0.0	0.9		0	1	0	1	0.0
		Northwest CI/Yentna	48.0	10.9	29.7	65.5		41	9	25	55	12.0
		Susitna	35.8	10.4	19.4	53.7		30	9	16	45	8.9
		Knik	15.5	5.3	7.6	24.8		13	4	6	21	3.9
		Turnagain/Northeast CI	0.3	1.1	0.0	1.6		0	1	0	1	0.1
		Kenai/Kasilof	0.0	0.1	0.0	0.1		0	0	0	0	0.0
		Southeast CI	0.2	0.8	0.0	1.6		0	1	0	1	0.1
							CPUE	84				
7/15–22	151	*Southwest CI*	0.0	0.2	0.0	0.0		0	0	0	0	0.0
		Northwest CI/Yentna	47.8	10.2	30.6	64.0		47	10	30	62	13.7
		Susitna	42.4	10.0	26.7	59.4		41	10	26	58	12.2
		Knik	9.1	3.6	3.6	15.5		9	4	4	15	2.6
		Turnagain/Northeast CI	0.3	0.9	0.0	1.8		0	1	0	2	0.1
		Kenai/Kasilof	0.5	1.2	0.0	3.1		0	1	0	3	0.1
		Southeast CI	0.0	0.1	0.0	0.0		0	0	0	0	0.0
							CPUE	97				
7/23–30	202	*Southwest CI*	0.1	0.3	0.0	0.4		0	0	0	1	0.0
		Northwest CI/Yentna	56.5	7.4	44.3	68.7		89	12	70	108	26.2
		Susitna	28.5	7.1	17.3	40.6		45	11	27	64	13.2
		Knik	14.0	6.6	3.7	24.7		22	10	6	39	6.5
		Turnagain/Northeast CI	0.9	2.2	0.0	6.3		1	4	0	10	0.4
		Kenai/Kasilof	0.0	0.2	0.0	0.1		0	0	0	0	0.0
		Southeast CI	0.1	0.3	0.0	0.2		0	0	0	0	0.0
							CPUE	157				
							Total	339				

Note: n is the final number of samples used in genetic analyses. Proportions for a given mixture may not sum to 1 due to rounding error.

Table 4.–Stock composition (%) and stock-specific catch per unit effort (CPUE) estimates, including mean, standard deviations (SD), 90% credibility intervals (CI), and sample size (n) for **temporally grouped mixtures** (Date ranges) of coho salmon captured in the **northern offshore test fishery in 2014**. See Appendix B2 for individual CPUEs by station and date.

			Stock composition					Stock-specific CPUE				
			Within date range					Within date range				Within year
Date		Reporting			90% CI					90% CI		
Range	n	Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
7/2–22	150	*Southwest CI*	0.0	0.2	0.0	0.0		0	0	0	0	0.0
		Northwest CI/Yentna	41.4	11.2	22.5	59.4		45	12	25	65	15.3
		Susitna	33.3	9.1	19.1	49.0		36	10	21	54	12.3
		Knik	25.1	7.2	13.7	37.6		27	8	15	41	9.3
		Turnagain/Northeast CI	0.2	0.7	0.0	0.9		0	1	0	1	0.1
		Kenai/Kasilof	0.0	0.2	0.0	0.1		0	0	0	0	0.0
		Southeast CI	0.0	0.1	0.0	0.0		0	0	0	0	0.0
							CPUE	109				
7/23–30	228	*Southwest CI*	0.0	0.1	0.0	0.0		0	0	0	0	0.0
		Northwest CI/Yentna	30.5	7.5	18.3	42.9		57	14	34	80	19.2
		Susitna	41.7	7.4	29.6	54.0		78	14	55	101	26.3
		Knik	25.5	5.2	17.4	34.5		48	10	33	65	16.1
		Turnagain/Northeast CI	1.5	2.4	0.0	7.1		3	5	0	13	0.9
		Kenai/Kasilof	0.9	0.7	0.1	2.2		2	1	0	4	0.6
		Southeast CI	0.0	0.1	0.0	0.0		0	0	0	0	0.0
							CPUE	187				
							Total CPUE	297				

Note: n is the final number of samples used in genetic analyses. Proportions for a given mixture may not sum to 1 due to rounding error.

Table 5.–Stock composition (%) and stock-specific catch per unit effort (CPUE) estimates, including mean, standard deviations (SD), 90% credibility intervals (CI), and sample size (n) for **spatially grouped mixtures** (Stations) of Coho salmon captured in the **southern offshore test fishery in 2013**. See Appendix B3 for individual CPUEs by station and date.

			Stock composition					Stock-specific CPUE				
			Within station					Within station				Within year
		Reporting			90% CI					90% CI		
Station	n	Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
4 and 5	112	*Southwest CI*	2.7	2.4	0.0	7.1		2	2	0	6	0.5
		Northwest CI/Yentna	24.3	8.4	10.5	38.3		21	7	9	33	4.2
		Susitna	55.5	8.8	41.0	69.8		48	8	36	61	9.7
		Knik	12.9	6.0	4.1	23.8		11	5	4	21	2.2
		Turnagain/Northeast CI	0.6	1.9	0.0	4.4		1	2	0	4	0.1
		Kenai/Kasilof	2.9	1.8	0.8	6.2		3	2	1	5	0.5
		Southeast CI	1.1	1.9	0.0	5.2		1	2	0	5	0.2
							CPUE	87				
6	221	*Southwest CI*	0.2	0.6	0.0	1.4		0	1	0	2	0.1
		Northwest CI/Yentna	55.3	8.2	41.8	68.9		77	11	58	96	15.6
		Susitna	31.0	7.9	18.2	44.0		43	11	25	62	8.8
		Knik	10.2	4.2	3.6	17.6		14	6	5	25	2.9
		Turnagain/Northeast CI	0.8	2.3	0.0	6.3		1	3	0	9	0.2
		Kenai/Kasilof	0.2	0.7	0.0	1.5		0	1	0	2	0.1
		Southeast CI	2.3	1.5	0.0	4.9		3	2	0	7	0.6
							CPUE	140				
6.5	144	*Southwest CI*	0.9	1.1	0.0	3.0		1	1	0	3	0.2
		Northwest CI/Yentna	37.8	9.3	22.5	53.2		34	8	20	48	6.9
		Susitna	48.6	9.1	33.9	63.6		44	8	31	58	8.9
		Knik	11.3	4.9	4.1	20.1		10	4	4	18	2.1
		Turnagain/Northeast CI	0.2	0.8	0.0	1.1		0	1	0	1	0.0
		Kenai/Kasilof	0.7	0.7	0.0	2.1		1	1	0	2	0.1
		Southeast CI	0.4	0.9	0.0	2.4		0	1	0	2	0.1
							CPUE	91				

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			Stock composition					Stock-specific CPUE					
			Within station					Within station					Within year
					90% CI					90% CI		
Station	n	Reporting Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
7 and 8	249	*Southwest CI*	0.2	0.4	0.0	0.9		0	1	0	2	0.1
		Northwest CI/Yentna	67.6	7.8	54.4	80.1		120	14	97	143	24.3
		Susitna	19.6	7.7	7.5	32.7		35	14	13	58	7.1
		Knik	12.0	3.7	6.1	18.4		21	7	11	33	4.3
		Turnagain/Northeast CI	0.1	0.5	0.0	0.8		0	1	0	1	0.0
		Kenai/Kasilof	0.2	0.5	0.0	1.2		0	1	0	2	0.1
		Southeast CI	0.2	0.4	0.0	0.9		0	1	0	2	0.1
							CPUE	178				
							Total CPUE	495				

Note: n is the final number of samples used in genetic analyses. Proportions for a given mixture may not sum to 1 due to rounding error.

Table 6.–Stock composition (%) and stock-specific catch per unit effort (CPUE) estimates, including mean, standard deviations (SD), 90% credibility intervals (CI), and sample size (n) for **spatially grouped mixtures** (Stations) of Coho salmon captured in the **southern offshore test fishery in 2014**. See Appendix B4 for individual CPUEs by station and date.

			Stock composition					Stock-specific CPUE				
			Within station					Within station				Within year
		Reporting			90% CI					90% CI		
Station	n	Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
4 and 5	128	*Southwest CI*	0.0	0.3	0.0	0.0		0	0	0	0	0.0
		Northwest CI/Yentna	39.3	8.2	25.8	53.0		41	9	27	55	6.2
		Susitna	22.9	7.9	10.4	36.1		24	8	11	38	3.6
		Knik	36.7	6.1	27.1	47.3		38	6	28	49	5.8
		Turnagain/Northeast CI	0.4	1.4	0.0	2.1		0	1	0	2	0.1
		Kenai/Kasilof	0.8	1.0	0.0	2.7		1	1	0	3	0.1
		Southeast CI	0.0	0.2	0.0	0.0		0	0	0	0	0.0
							CPUE	104				
6	144	*Southwest CI*	1.6	1.6	0.0	4.6		2	2	0	5	0.3
		Northwest CI/Yentna	30.8	9.2	15.5	46.1		36	11	18	54	5.5
		Susitna	37.1	9.1	22.4	52.4		43	11	26	61	6.6
		Knik	29.1	5.7	20.2	38.8		34	7	24	46	5.2
		Turnagain/Northeast CI	1.3	3.5	0.0	9.9		1	4	0	12	0.2
		Kenai/Kasilof	0.0	0.2	0.0	0.1		0	0	0	0	0.0
		Southeast CI	0.1	0.6	0.0	0.4		0	1	0	1	0.0
							CPUE	117				
6.5	218	*Southwest CI*	2.0	1.1	0.6	4.1		4	2	1	7	0.6
		Northwest CI/Yentna	34.4	6.0	24.9	44.5		63	11	46	82	9.6
		Susitna	34.2	6.0	24.4	44.2		63	11	45	81	9.6
		Knik	25.8	4.9	17.9	34.0		47	9	33	62	7.2
		Turnagain/Northeast CI	3.1	3.3	0.0	9.1		6	6	0	17	0.9
		Kenai/Kasilof	0.5	0.5	0.0	1.5		1	1	0	3	0.1
		Southeast CI	0.0	0.1	0.0	0.0		0	0	0	0	0.0
							CPUE	183				

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Table 6.–Page 2 of 2.

			Stock composition				Stock-specific CPUE				
			Within station				Within station				Within year
		Reporting			90% CI				90% CI		
Station	n	Group	Mean	SD	5%	95%	Mean	SD	5%	95%	Percentage
7 and 8	259	*Southwest CI*	1.0	1.0	0.0	3.0	3	3	0	7	0.4
		Northwest CI/Yentna	41.0	7.6	28.5	53.5	103	19	71	134	15.7
		Susitna	36.7	7.0	25.2	48.4	92	18	63	121	14.0
		Knik	14.5	3.8	8.7	21.1	36	9	22	53	5.5
		Turnagain/Northeast CI	6.0	3.3	0.0	11.3	15	8	0	28	2.3
		Kenai/Kasilof	0.8	0.6	0.1	1.9	2	1	0	5	0.3
		Southeast CI	0.0	0.1	0.0	0.0	0	0	0	0	0.0
							CPUE	250			
							Total CPUE	655			

Note: n is the final number of samples used in genetic analyses. Proportions for a given mixture may not sum to 1 due to rounding error.

Table 7.–Stock composition (%) and stock-specific catch per unit effort (CPUE) estimates, including mean, standard deviations (SD), 90% credibility intervals (CI), and sample size (n) for **spatially grouped mixtures** (Stations) of Coho salmon captured in the **southern offshore test fishery in 2015**. See Appendix B5 for individual CPUEs by station and date.

			Stock composition					Stock-specific CPUE				
			Within station					Within station				Within year
		Reporting			90% CI					90% CI		
Station	n	Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
4, 5, 6, and 6.5	232	*Southwest CI*	3.0	1.4	1.1	5.5		4	2	2	8	1.6
		Northwest CI/Yentna	25.3	6.9	14.3	37.1		37	10	21	55	13.5
		Susitna	48.6	7.3	36.6	60.6		72	11	54	89	25.9
		Knik	22.4	4.7	14.9	30.3		33	7	22	45	11.9
		Turnagain/Northeast CI	0.3	1.1	0.0	2.4		1	2	0	4	0.2
		Kenai/Kasilof	0.0	0.1	0.0	0.1		0	0	0	0	0.0
		Southeast CI	0.3	0.6	0.0	1.5		0	1	0	2	0.2
							CPUE	148				
7 and 8	168	*Southwest CI*	4.2	1.9	1.5	7.7		5	3	2	10	2.0
		Northwest CI/Yentna	37.2	8.1	24.5	51.2		48	11	32	66	17.4
		Susitna	34.8	8.0	21.6	48.0		45	10	28	62	16.3
		Knik	23.4	5.4	15.0	32.7		30	7	19	42	10.9
		Turnagain/Northeast CI	0.3	1.3	0.0	1.9		0	2	0	3	0.2
		Kenai/Kasilof	0.0	0.2	0.0	0.1		0	0	0	0	0.0
		Southeast CI	0.0	0.3	0.0	0.1		0	0	0	0	0.0
							CPUE	129				
							Total CPUE	277				

Note: n is the final number of samples used in genetic analyses. Proportions for a given mixture may not sum to 1 due to rounding error.

Table 8.–Stock composition (%) and stock-specific catch per unit effort (CPUE) estimates, including mean, standard deviations (SD), 90% credibility intervals (CI), and sample size (n) for **temporally grouped mixtures** (Date ranges) of coho salmon captured in the **southern offshore test fishery in 2013**. See Appendix B3 for individual CPUEs by station and date.

			Stock composition				Stock-specific CPUE					
			Within date range				Within date range					Within year
Date		Reporting			90% CI				90% CI			
Range	n	Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
7/1–13	104	*Southwest CI*	0.3	1.2	0.0	2.2		0	1	0	2	0.0
		Northwest CI/Yentna	27.9	9.0	13.9	43.3		21	7	10	32	4.2
		Susitna	52.5	9.2	37.4	67.6		39	7	28	50	7.8
		Knik	18.1	7.0	6.9	30.3		13	5	5	22	2.7
		Turnagain/Northeast CI	0.2	0.9	0.0	1.5		0	1	0	1	0.0
		Kenai/Kasilof	0.1	0.3	0.0	0.2		0	0	0	0	0.0
		Southeast CI	0.8	1.5	0.0	4.2		1	1	0	3	0.1
							CPUE	74				
7/15-22	262	*Southwest CI*	1.5	1.3	0.0	3.9		3	2	0	7	0.6
		Northwest CI/Yentna	53.2	6.7	42.3	64.2		94	12	75	114	19.1
		Susitna	31.5	6.0	21.7	41.4		56	11	38	74	11.3
		Knik	8.7	3.6	3.3	15.2		15	6	6	27	3.1
		Turnagain/Northeast CI	1.6	3.3	0.0	9.3		3	6	0	16	0.6
		Kenai/Kasilof	0.3	0.8	0.0	2.1		1	1	0	4	0.1
		Southeast CI	3.1	2.0	0.0	6.4		6	3	0	11	1.1
							CPUE	177				
7/23-30	361	*Southwest CI*	0.1	0.3	0.0	0.8		0	1	0	2	0.1
		Northwest CI/Yentna	54.3	8.1	40.7	67.4		132	20	99	165	26.7
		Susitna	33.1	8.0	20.0	46.4		81	20	49	113	16.3
		Knik	10.4	3.3	5.2	15.9		25	8	13	39	5.1
		Turnagain/Northeast CI	0.1	0.5	0.0	0.6		0	1	0	1	0.1
		Kenai/Kasilof	1.6	0.7	0.6	2.9		4	2	1	7	0.8
		Southeast CI	0.5	0.6	0.0	1.7		1	1	0	4	0.2
							CPUE	244				
							Total CPUE	495				

Note: n is the final number of samples used in genetic analyses. Proportions for a given mixture may not sum to 1 due to rounding error.

Table 9.–Stock composition (%) and stock-specific catch per unit effort (CPUE) estimates, including mean, standard deviations (SD), 90% credibility intervals (CI), and sample size (n) for **temporally grouped mixtures** (Date ranges) of coho salmon captured in the **southern offshore test fishery in 2014**. See Appendix B4 for individual CPUEs by station and date.

			Stock composition					Stock-specific CPUE				
			Within date range					Within date range				Within year
Date		Reporting			90% CI					90% CI		
Range	n	Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
7/3–22	279	*Southwest CI*	2.0	1.1	0.5	4.0		5	3	1	10	0.7
		Northwest CI/Yentna	35.2	6.5	24.7	46.0		85	16	60	112	13.0
		Susitna	36.6	6.8	25.6	47.8		89	16	62	116	13.5
		Knik	25.1	4.4	18.2	32.6		61	11	44	79	9.3
		Turnagain/Northeast CI	1.0	1.8	0.0	4.9		2	4	0	12	0.4
		Kenai/Kasilof	0.0	0.1	0.0	0.0		0	0	0	0	0.0
		Southeast CI	0.1	0.2	0.0	0.4		0	1	0	1	0.0
							CPUE	242				
7/23–26	204	*Southwest CI*	1.3	1.1	0.1	3.3		3	2	0	7	0.4
		Northwest CI/Yentna	34.2	7.5	22.1	46.7		67	15	43	91	10.2
		Susitna	40.5	7.4	28.6	53.0		79	14	56	103	12.1
		Knik	22.7	5.1	14.8	31.4		44	10	29	61	6.8
		Turnagain/Northeast CI	0.5	1.6	0.0	3.7		1	3	0	7	0.1
		Kenai/Kasilof	0.7	0.7	0.0	2.2		1	1	0	4	0.2
		Southeast CI	0.0	0.2	0.0	0.0		0	0	0	0	0.0
							CPUE	195				
7/27–8/1	266	*Southwest CI*	0.3	0.6	0.0	1.7		1	1	0	4	0.1
		Northwest CI/Yentna	38.9	6.2	28.8	49.2		85	14	63	107	12.9
		Susitna	29.5	5.8	20.1	39.2		64	13	44	85	9.8
		Knik	23.7	4.2	17.0	30.7		52	9	37	67	7.9
		Turnagain/Northeast CI	6.2	4.5	0.0	15.0		13	10	0	33	2.0
		Kenai/Kasilof	1.2	0.7	0.3	2.5		3	2	1	5	0.4
		Southeast CI	0.2	0.7	0.0	1.7		0	1	0	4	0.1
							CPUE	218				
							Total CPUE	655				

Note: n is the final number of samples used in genetic analyses. Proportions for a given mixture may not sum to 1 due to rounding error.

Table 10.–Stock composition (%) and stock-specific catch per unit effort (CPUE) estimates, including mean, standard deviations (SD), 90% credibility intervals (CI), and sample size (n) for **temporally grouped mixtures** (Date ranges) of coho salmon captured in the **southern offshore test fishery in 2015**. See Appendix B5 for individual CPUEs by station and date.

			Stock composition					Stock-specific CPUE					
			Within date range					Within date range					Within year
Date		Reporting			90% CI					90% CI		
Range	n	Group	Mean	SD	5%	95%		Mean	SD	5%	95%	Percentage
7/1–22	255	*Southwest CI*	2.0	1.1	0.5	4.0		3	2	1	7	1.3
		Northwest CI/Yentna	35.2	6.5	24.7	46.0		61	11	43	79	21.9
		Susitna	36.6	6.8	25.6	47.8		63	12	44	82	22.7
		Knik	25.1	4.4	18.2	32.6		43	8	31	56	15.6
		Turnagain/Northeast CI	1.0	1.8	0.0	4.9		2	3	0	9	0.6
		Kenai/Kasilof	0.0	0.1	0.0	0.0		0	0	0	0	0.0
		Southeast CI	0.1	0.2	0.0	0.4		0	0	0	1	0.0
							CPUE	172				
7/23–	145	*Southwest CI*	1.3	1.1	0.1	3.3		1	1	0	4	0.5
		Northwest CI/Yentna	34.2	7.5	22.1	46.7		36	8	23	49	13.0
		Susitna	40.5	7.4	28.6	53.0		43	8	30	56	15.4
		Knik	22.7	5.1	14.8	31.4		24	5	16	33	8.6
		Turnagain/Northeast CI	0.5	1.6	0.0	3.7		1	2	0	4	0.2
		Kenai/Kasilof	0.7	0.7	0.0	2.2		1	1	0	2	0.3
		Southeast CI	0.0	0.2	0.0	0.0		0	0	0	0	0.0
							CPUE	105				
							Total CPUE	277				

Note: n is the final number of samples used in genetic analyses. Proportions for a given mixture may not sum to 1 due to rounding error.

Table 11.–Stock-specific catch per unit effort (CPUE), standard deviation (SD), and 90% credibility intervals calculated using a stratified estimator (see text) for combined temporal strata in the **northern** (3 strata) and **southern** (3 strata) **offshore test fisheries** and based on genetic analysis of mixtures of coho salmon harvested in the **Upper Cook Inlet in 2013**.

			90% CI		
Fishery	Reporting Group	CPUE	5%	95%	SD
Northern offshore test fishery					
	Southwest CI	0	0	2	1
	Northwest CI/Yentna	176	147	205	18
	Susitna	116	88	145	17
	Knik	44	25	63	12
	Turnagain/Northeast CI	2	0	11	4
	Kenai/Kasilof	1	0	3	1
	Southeast CI	0	0	2	1
	Total CPUE	339			
South Offshore Test Fishery					
	Southwest CI	3	0	8	3
	Northwest CI/Yentna	248	208	287	24
	Susitna	175	138	214	23
	Knik	54	36	74	12
	Turnagain/Northeast CI	3	0	17	6
	Kenai/Kasilof	4	2	9	2
	Southeast CI	7	1	14	4
	Total CPUE	495			

Note: Stock-specific CPUE numbers may not sum to the total harvest due to rounding error.

Table 12.–Stock-specific catch per unit effort (CPUE), standard deviation (SD), and 90% credibility intervals calculated using a stratified estimator (see text) for combined temporal strata in the **northern** (2 strata) and **southern** (3 strata) **offshore test fisheries** and based on genetic analysis of mixtures of coho salmon harvested in the **Upper Cook Inlet in 2014**.

			90% CI		
Fishery	Reporting Group	CPUE	5%	95%	SD
North Offshore Test Fishery					
	Southwest CI	0	0	0	0
	Northwest CI/Yentna	102	72	133	19
	Susitna	115	87	143	17
	Knik	75	55	97	13
	Turnagain/Northeast CI	3	0	13	5
	Kenai/Kasilof	2	0	4	1
	Southeast CI	0	0	0	0
	Total CPUE	297			
South Offshore Test Fishery					
	Southwest CI	8	3	15	4
	Northwest CI/Yentna	237	195	279	25
	Susitna	232	191	274	25
	Knik	157	129	186	17
	Turnagain/Northeast CI	17	0	38	11
	Kenai/Kasilof	4	1	8	2
	Southeast CI	1	0	4	2
	Total CPUE	655			

Note: Stock-specific harvest numbers may not sum to the total harvest due to rounding error.

Table 13.–Stock-specific catch per unit effort (CPUE), standard deviation (SD), and 90% credibility intervals calculated using a stratified estimator (see text) for combined temporal strata in the **southern offshore test fishery** (2 strata) and based on genetic analysis of mixtures of coho salmon harvested in the **Upper Cook Inlet in 2015**.

			90% CI		
Fishery	Reporting Group	CPUE	5%	95%	SD
	Southwest CI	7	2	13	3
	Northwest CI/Yentna	87	63	112	15
	Susitna	114	89	139	15
	Knik	66	51	82	10
	Turnagain/Northeast CI	1	0	7	3
	Kenai/Kasilof	0	0	0	0
	Southeast CI	2	0	9	3
	Total CPUE	277			

Note: Stock-specific harvest numbers may not sum to the total harvest due to rounding error.

Table 14.–Stock-specific harvest, standard deviation (SD), coefficient of variation (CV), and 90% credibility intervals calculated using a stratified estimator (see text) for combined temporal strata in all fishing area strata and based on genetic analysis of mixtures of coho salmon harvested in the **Upper Cook Inlet, 2013-2015**.

			90% CI			
Year	Reporting Group	Harvest	5%	95%	SD	CV
2013	*Southwest CI*	1,529	962	2,261	400	26%
	Northwest CI/Yentna	109,965	100,778	119,090	5,567	5%
	Susitna	64,530	55,800	73,340	5,321	8%
	Knik	36,279	31,241	41,710	3,183	9%
	Turnagain/Northeast CI	8,918	6,356	12,320	1,875	21%
	Kenai/Kasilof	1,927	1,126	2,880	537	28%
	Southeast CI	459	0	1,280	431	94%
	Harvest represented	223,607				
	Harvest unanalyzed	37,356				
	Total harvest	260,963				
2014	*Southwest CI*	144	25	338	100	69%
	Northwest CI/Yentna	32,420	28,674	36,271	2,304	7%
	Susitna	29,725	25,834	33,641	2,374	8%
	Knik	26,530	23,971	29,165	1,582	6%
	Turnagain/Northeast CI	14,318	12,197	16,578	1,330	9%
	Kenai/Kasilof	2,117	1,514	2,786	388	18%
	Southeast CI	13	0	78	41	321%
	Harvest represented	105,266				
	Harvest unanalyzed	32,153				
	Total harvest	137,419				
2015	*Southwest CI*	143	0	553	201	140%
	Northwest CI/Yentna	72,500	66,529	78,601	3,675	5%
	Susitna	41,608	36,170	47,112	3,314	8%
	Knik	43,799	39,857	47,848	2,431	6%
	Turnagain/Northeast CI	16,669	13,315	19,974	2,016	12%
	Kenai/Kasilof	9,043	7,760	10,392	802	9%
	Southeast CI	971	510	1,529	315	32%
	Harvest represented	184,733				
	Harvest unanalyzed	31,299				
	Total harvest	216,032				

Note: Stock-specific harvest numbers may not sum to the total harvest due to rounding error.

Table 15.–Stock-specific harvest, standard deviation (SD), coefficient of variation (CV), and 90% credibility intervals calculated using a stratified estimator (see text) for combined strata in the **Central District drift gillnet** (5 temporal strata) and **Northern District set gillnet** (3 spatial strata) **fisheries** and based on genetic analysis of mixtures of coho salmon harvested in the **Upper Cook Inlet in 2013**.

			90% CI			
Area strata	Reporting Group	Harvest	5%	95%	SD	CV
Central District drift gillnet						
	Southwest CI	1,524	959	2,254	399	26%
	Northwest CI/Yentna	93,995	85,163	102,728	5,333	6%
	Susitna	54,419	46,113	62,826	5,098	9%
	Knik	28,074	23,210	33,346	3,083	11%
	Turnagain/Northeast CI	1,803	0	4,982	1,711	95%
	Kenai/Kasilof	1,544	829	2,433	494	32%
	Southeast CI	457	0	1,277	431	94%
	Harvest represented	181,818				
	Harvest unanalyzed	2,953				
	Total Harvest	184,771				
Northern District, Eastern and General subdistricts set gillnet						
	Southwest CI	4	0	20	22	503%
	Northwest CI/Yentna	15,970	13,311	18,556	1,593	10%
	Susitna	10,111	7,703	12,588	1,486	15%
	Knik	8,204	6,997	9,424	739	9%
	Turnagain/Northeast CI	7,114	5,938	8,383	744	10%
	Kenai/Kasilof	383	94	750	209	55%
	Southeast CI	2	0	8	12	598%
	Harvest represented	41,789				
	Harvest unanalyzed	624				
	Total Harvest	42,413				

Note: Stock-specific harvest numbers may not sum to the total harvest due to rounding error.

Table 16.–Stock-specific harvest, standard deviation (SD), coefficient of variation (CV), and 90% credibility intervals calculated using a stratified estimator (see text) for combined strata in the **Central District drift gillnet** (5 temporal strata) and **Northern District set gillnet** (3 spatial strata) **fisheries** and based on genetic analysis of mixtures of coho salmon harvested in the **Upper Cook Inlet in 2014**.

			90% CI			
Area strata	Reporting Group	Harvest	5%	95%	SD	CV
Central District drift gillnet						
	Southwest CI	142	24	335	99	70%
	Northwest CI/Yentna	23,074	19,921	26,381	1,961	8%
	Susitna	22,962	19,567	26,369	2,066	9%
	Knik	16,853	14,559	19,227	1,417	8%
	Turnagain/Northeast CI	6,523	4,752	8,434	1,119	17%
	Kenai/Kasilof	1,881	1,319	2,504	361	19%
	Southeast CI	6	0	31	27	463%
	Harvest represented	71,441				
	Harvest unanalyzed	5,491				
	Total Harvest	76,932				
Northern District, Eastern and General subdistricts set gillnet						
	Southwest CI	2	0	8	13	588%
	Northwest CI/Yentna	9,346	7,392	11,431	1,224	13%
	Susitna	6,762	4,808	8,642	1,160	17%
	Knik	9,677	8,564	10,827	688	7%
	Turnagain/Northeast CI	7,794	6,619	9,048	745	10%
	Kenai/Kasilof	236	51	494	140	59%
	Southeast CI	7	0	40	30	437%
	Harvest represented	33,825				
	Harvest unanalyzed	1,375				
	Total Harvest	35,200				

Note: Stock-specific harvest numbers may not sum to the total harvest due to rounding error.

Table 17.–Stock-specific harvest, standard deviation (SD), coefficient of variation (CV), and 90% credibility intervals calculated using a stratified estimator (see text) for combined strata in the **Central District drift gillnet excluding corridor-only periods** (5 temporal strata), **drift gillnet corridor-only periods** (1 temporal stratum) and **Upper Subdistrict set gillnet** (1 temporal stratum) and **Northern District set gillnet** (3 spatial strata) **fisheries** and based on genetic analysis of mixtures of coho salmon harvested in the **Upper Cook Inlet in 2015**.

			90% CI			
Area strata	Reporting Group	Harvest	5%	95%	SD	CV
Central District drift gillnet (excluding corridor-only periods)						
	Southwest CI	135	0	542	197	146%
	Northwest CI/Yentna	43,293	38,421	48,228	2,977	7%
	Susitna	25,021	20,652	29,468	2,681	11%
	Knik	21,062	17,853	24,389	1,989	9%
	Turnagain/Northeast CI	3,372	686	5,970	1,575	47%
	Kenai/Kasilof	2,840	1,953	3,834	574	20%
	Southeast CI	957	501	1,508	312	33%
	Harvest represented	96,681				
	Harvest unanalyzed	6,007				
	Total Harvest	102,688				
Central District drift gillnet (corridor-only periods)						
	Southwest CI	1	0	0	9	915%
	Northwest CI/Yentna	10,854	8,778	12,964	1,275	12%
	Susitna	6,657	4,786	8,619	1,165	18%
	Knik	7,383	6,026	8,891	871	12%
	Turnagain/Northeast CI	1,794	59	3,299	959	53%
	Kenai/Kasilof	714	338	1,150	248	35%
	Southeast CI	2	0	2	15	741%
	Harvest represented	27,405				
	Harvest unanalyzed	627				
	Total Harvest	28,032				
Central District, Upper Subdistrict set gillnet						
	Southwest CI	3	0	2	23	735%
	Northwest CI/Yentna	2,987	1,358	4,658	997	33%
	Susitna	2,970	1,674	4,352	812	27%
	Knik	4,027	2,890	5,242	720	18%
	Turnagain/Northeast CI	2,338	1,567	3,179	490	21%
	Kenai/Kasilof	5,185	4,401	5,995	484	9%
	Southeast CI	6	0	28	32	531%
	Harvest represented	17,517				
	Harvest unanalyzed	305				
	Total Harvest	17,822				

-continued-

Table 17.–Page 2 of 2.

Area strata	Reporting Group	Harvest	90% CI 5%	90% CI 95%	SD	CV
Northern District, Eastern and General subdistricts set gillnet						
	Southwest CI	3	0	13	19	565%
	Northwest CI/Yentna	15,366	12,947	17,794	1,471	10%
	Susitna	6,959	4,668	9,245	1,386	20%
	Knik	11,327	10,060	12,690	805	7%
	Turnagain/Northeast CI	9,165	8,202	10,165	605	7%
	Kenai/Kasilof	303	120	554	135	44%
	Southeast CI	6	0	30	28	477%
	Harvest represented	43,130				
	Harvest unanalyzed	3,486				
	Total Harvest	46,616				

Note: Stock-specific harvest numbers may not sum to the total harvest due to rounding error.

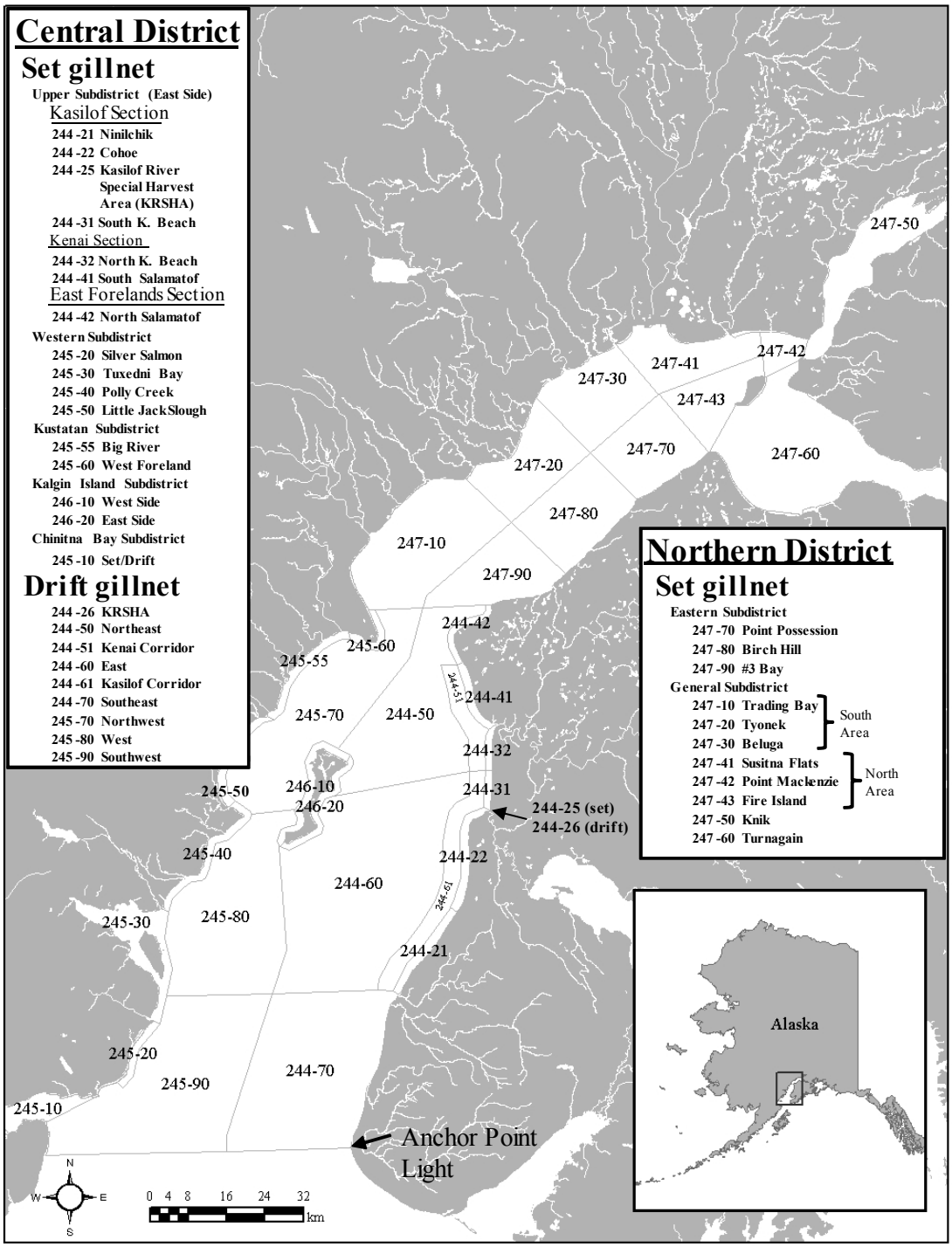


Figure 1.–Map of Upper Cook Inlet showing commercial fishing boundaries (statistical areas) for subdistricts and selected sections and subsections within the Northern and Central districts for both set and drift gillnet fisheries.

Note: Districts, subdistricts, and sections are defined in Alaska Administrative Code (5 AAC 21.200). For the purposes of this report the statistical areas in Upper Subdistrict (Central District) are referred to as subsections.

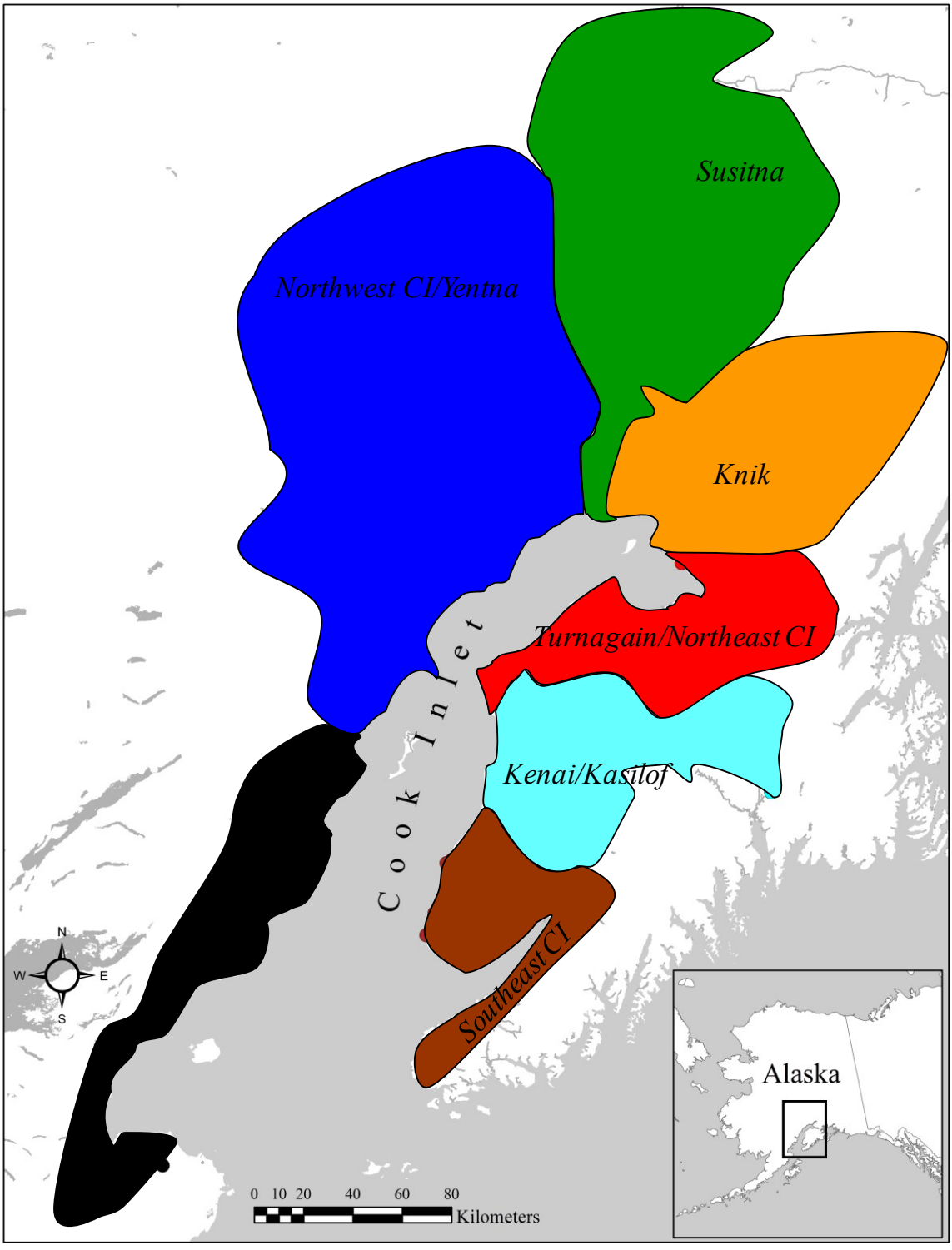


Figure 2.–Map of Cook Inlet showing reporting group areas for genetic mixed stock analysis of coho salmon harvest samples.

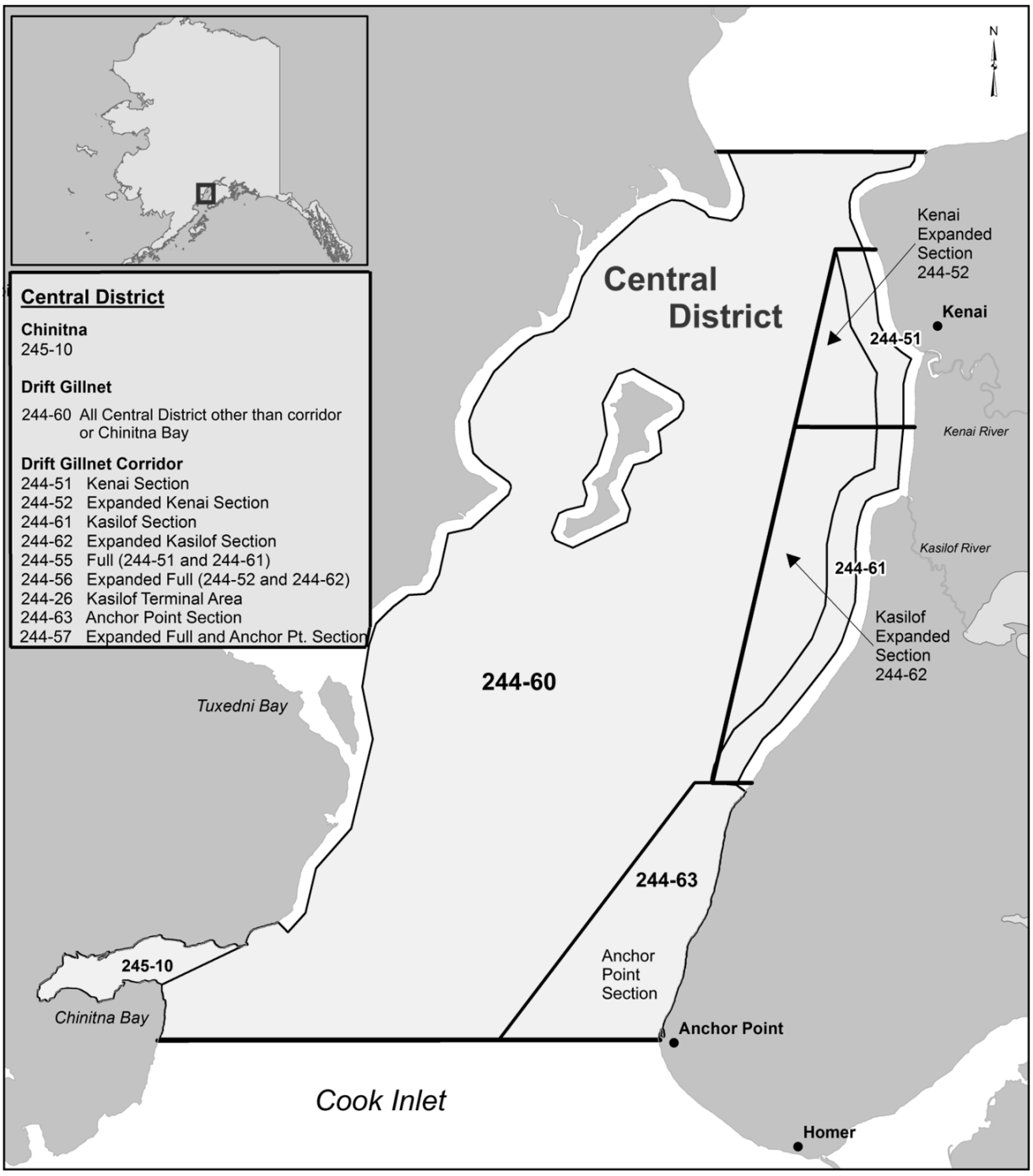


Figure 3.–Map of Upper Cook Inlet showing commercial fishing boundaries (statistical areas) within the Central district drift gillnet fishery, including the Kenai and Kasilof sections and expanded sections (see text).

Note: Districts, subdistricts, and sections are defined in Alaska Administrative Code (5 AAC 21.200).

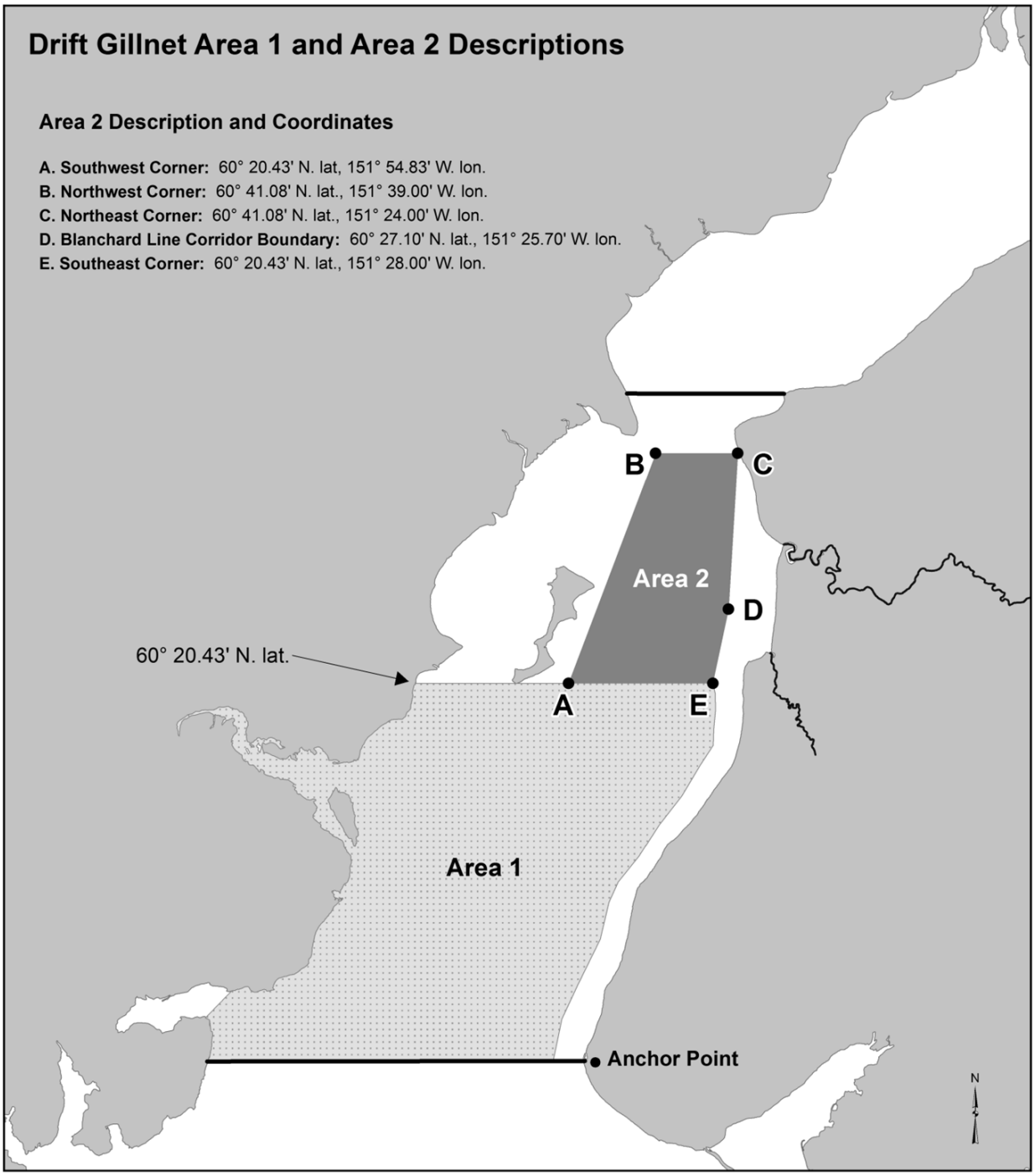


Figure 4.–Map of Upper Cook Inlet showing commercial fishing boundaries (statistical areas) within the Central district drift gillnet fishery, including the areas 1 and 2 (see text).

Note: Districts, subdistricts, and sections are defined in Alaska Administrative Code (5 AAC 21.200).

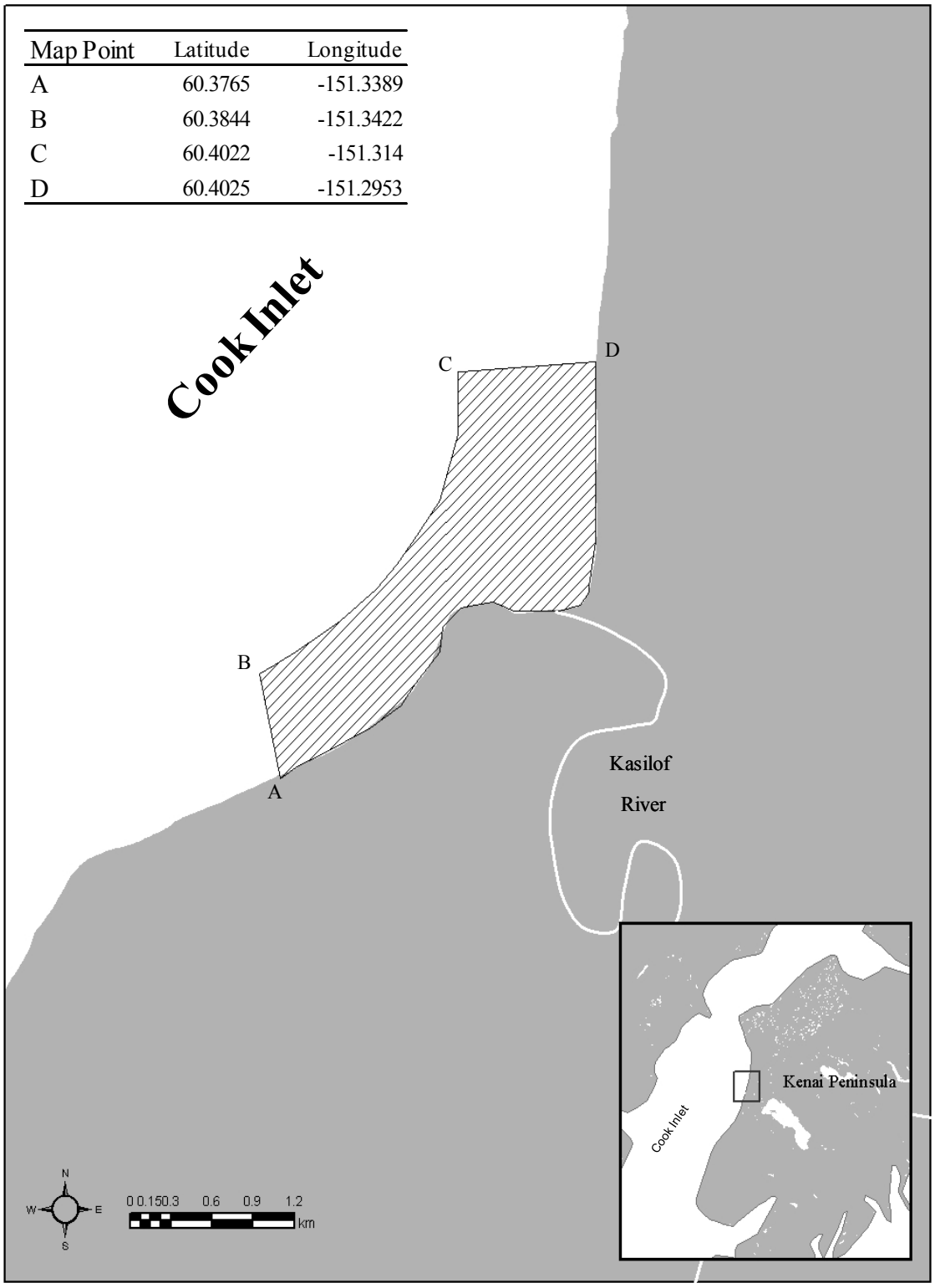


Figure 5.–Map of the mouth of the Kasilof River showing management fishing boundaries for the Kasilof River Special Harvest Area (Central District, Upper Subdistrict).

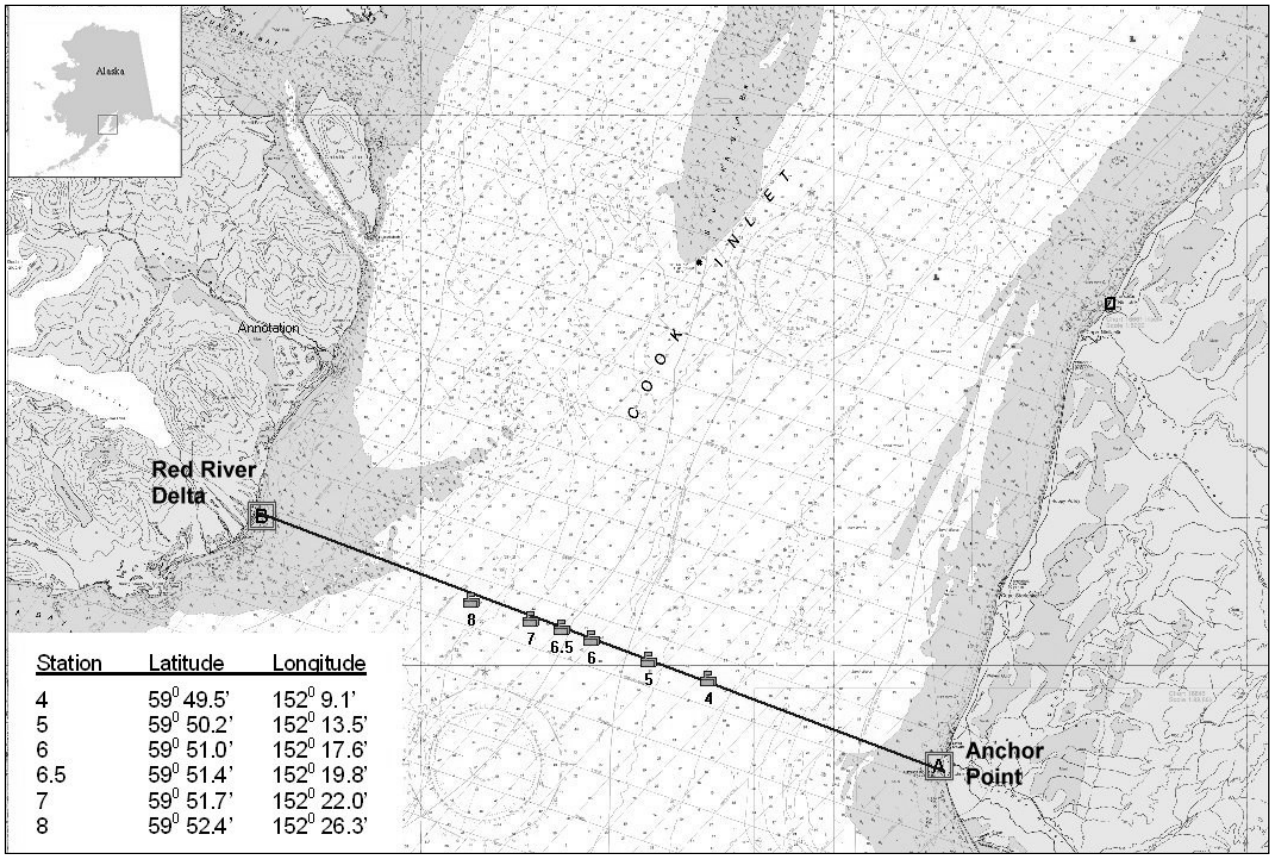
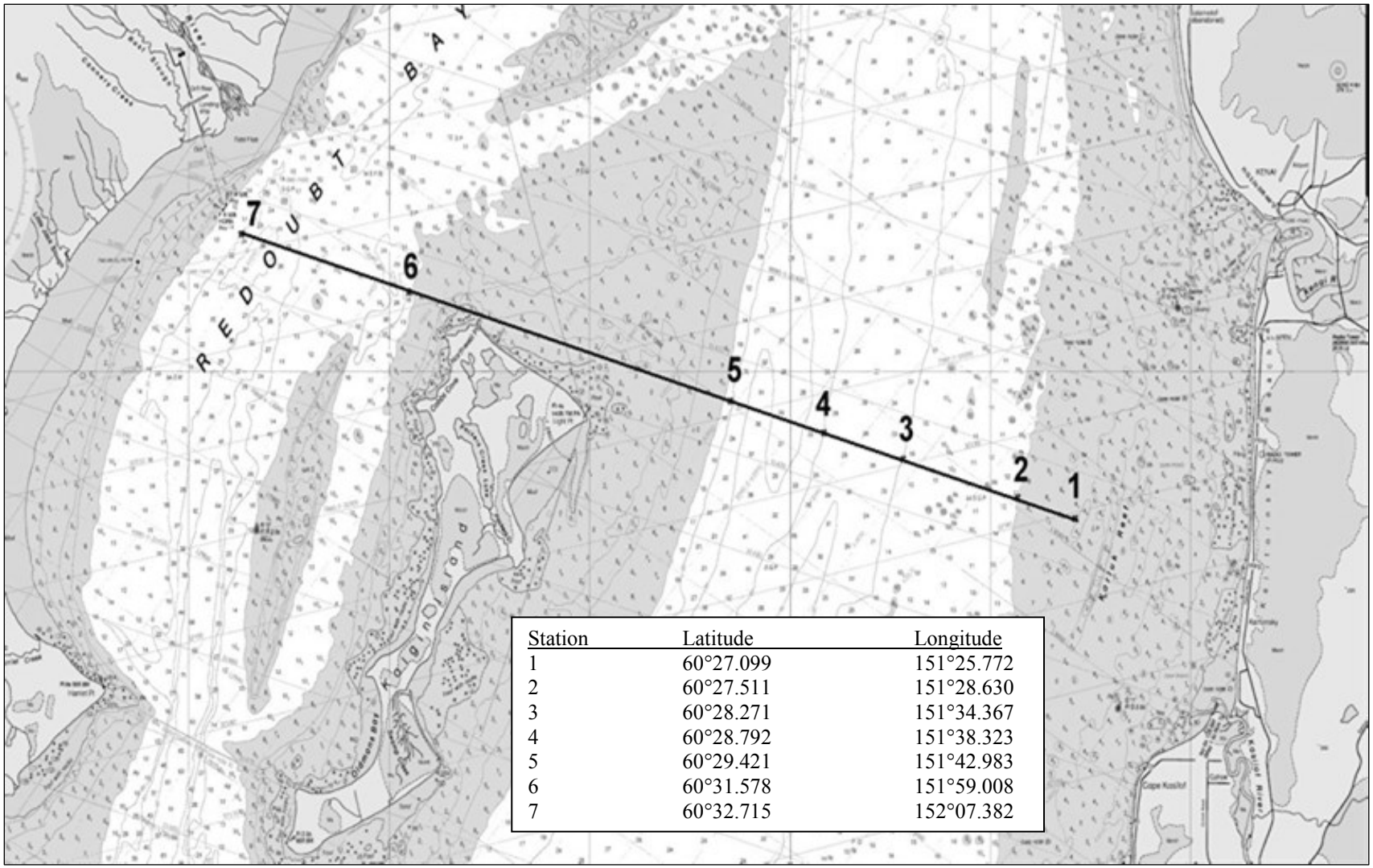
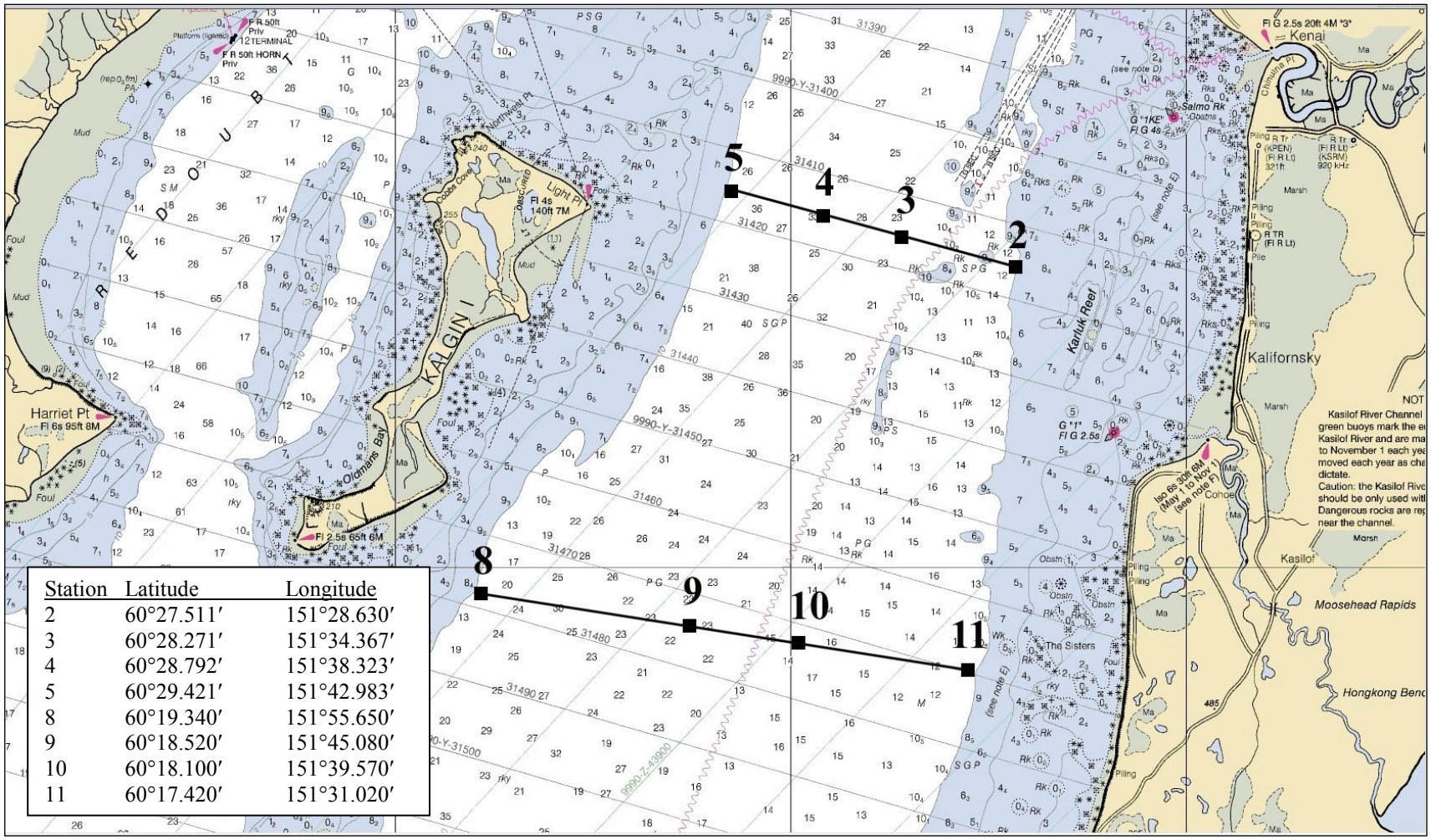


Figure 6.–Map of the southern offshore test fishery transect and fishing stations in Cook Inlet, Alaska, 2013-2015.



Station	Latitude	Longitude
1	60°27.099	151°25.772
2	60°27.511	151°28.630
3	60°28.271	151°34.367
4	60°28.792	151°38.323
5	60°29.421	151°42.983
6	60°31.578	151°59.008
7	60°32.715	152°07.382

Figure 7.–Map of the northern offshore test fishery transect and fishing stations in Upper Cook Inlet, Alaska, 2013.



Station	Latitude	Longitude
2	60°27.511′	151°28.630′
3	60°28.271′	151°34.367′
4	60°28.792′	151°38.323′
5	60°29.421′	151°42.983′
8	60°19.340′	151°55.650′
9	60°18.520′	151°45.080′
10	60°18.100′	151°39.570′
11	60°17.420′	151°31.020′

Figure 8.–Map of the northern offshore test fish transects and fishing stations in Upper Cook Inlet, Alaska, 2014.

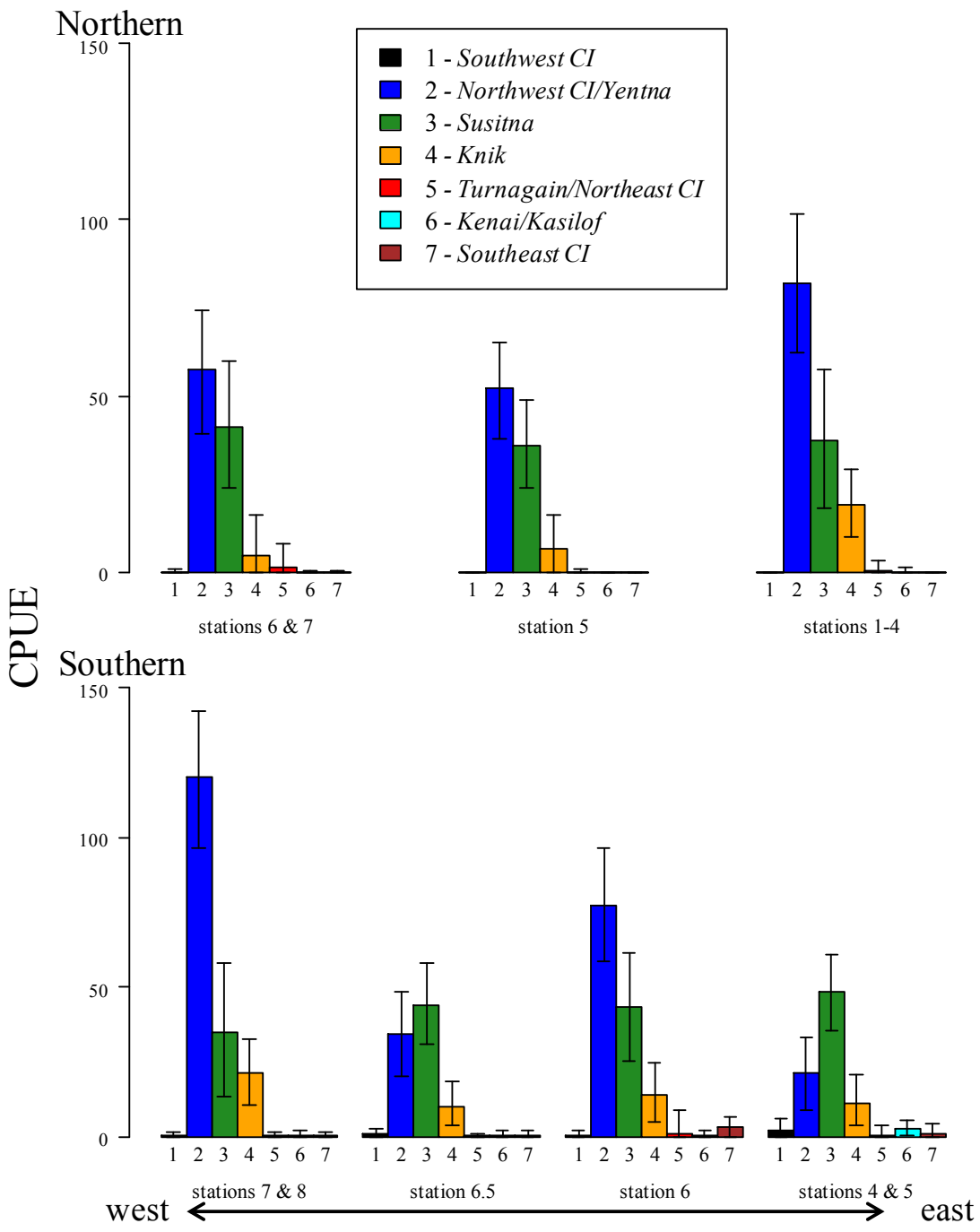


Figure 9.–**Northern and southern offshore test fishery by test fish station in 2013**; CPUE estimates for coho salmon by stock and 90% credibility intervals. Estimates are ordered from west (left) to east (right) Cook Inlet.

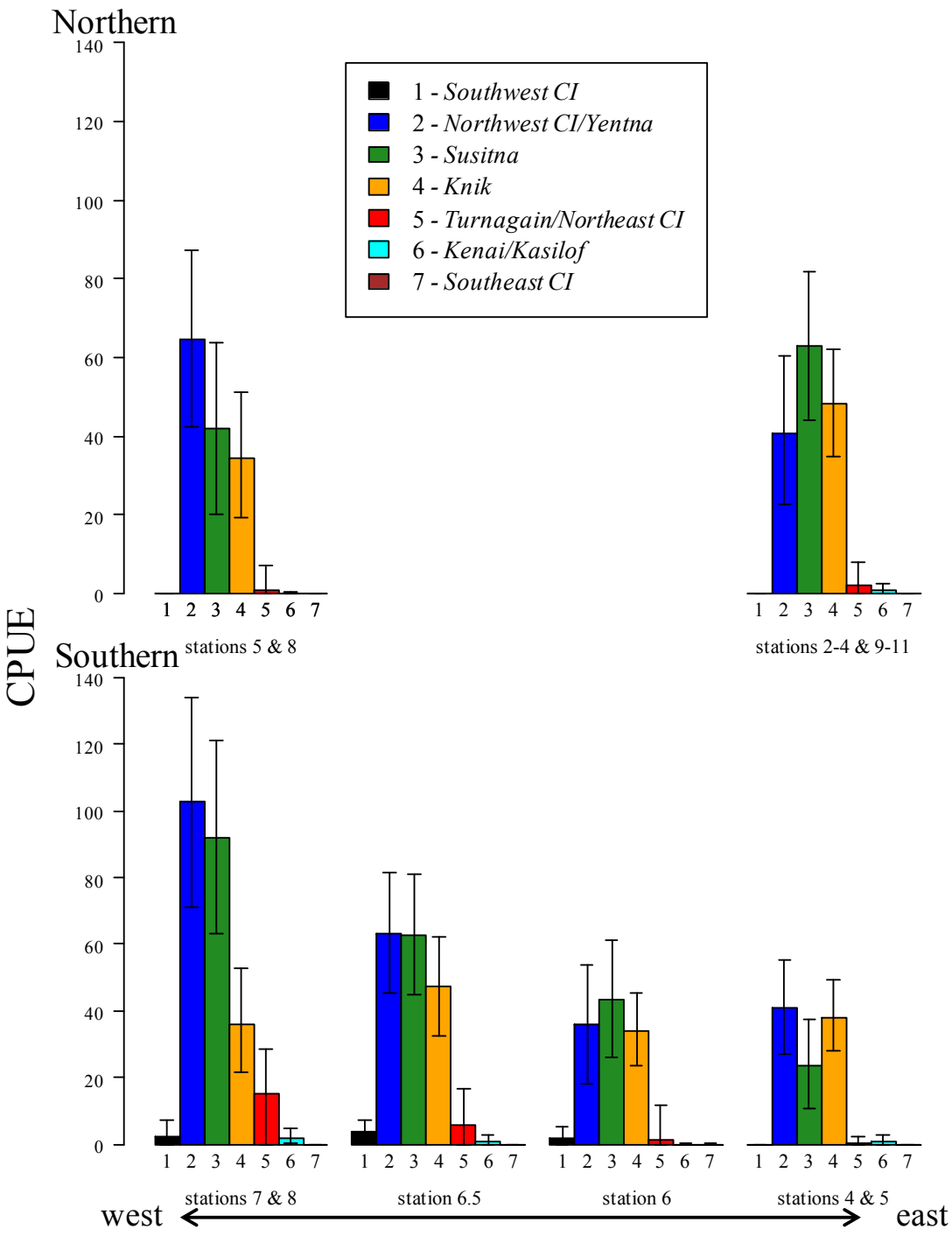


Figure 10.–**Northern and southern offshore test fishery by test fish station in 2014**; CPUE estimates for coho salmon by stock and 90% credibility intervals. Estimates are ordered from west (left) to east (right) Cook Inlet.

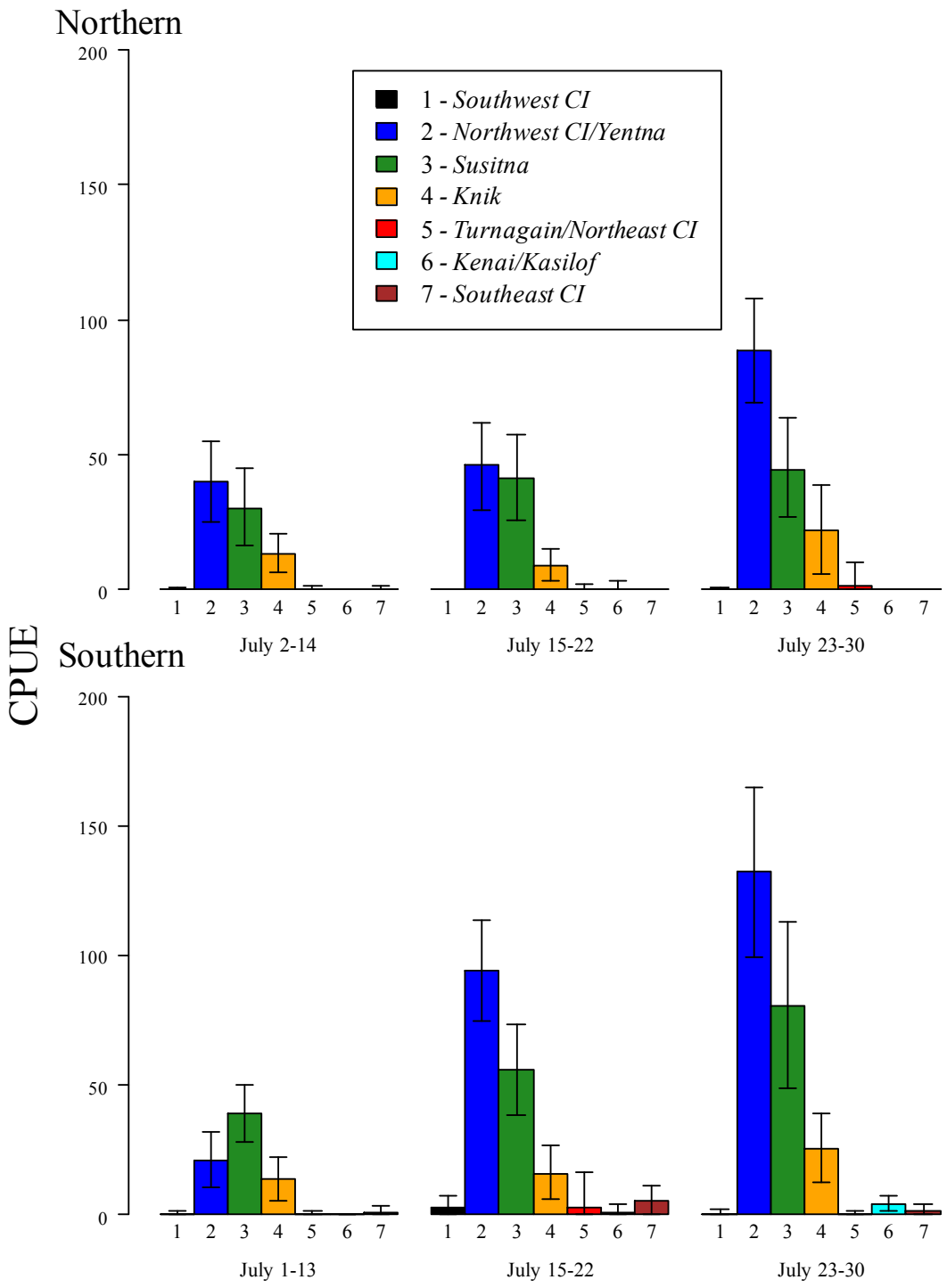


Figure 11.–**Northern and southern offshore test fishery by date in 2013**; CPUE estimates for coho salmon by stock and 90% credibility intervals.

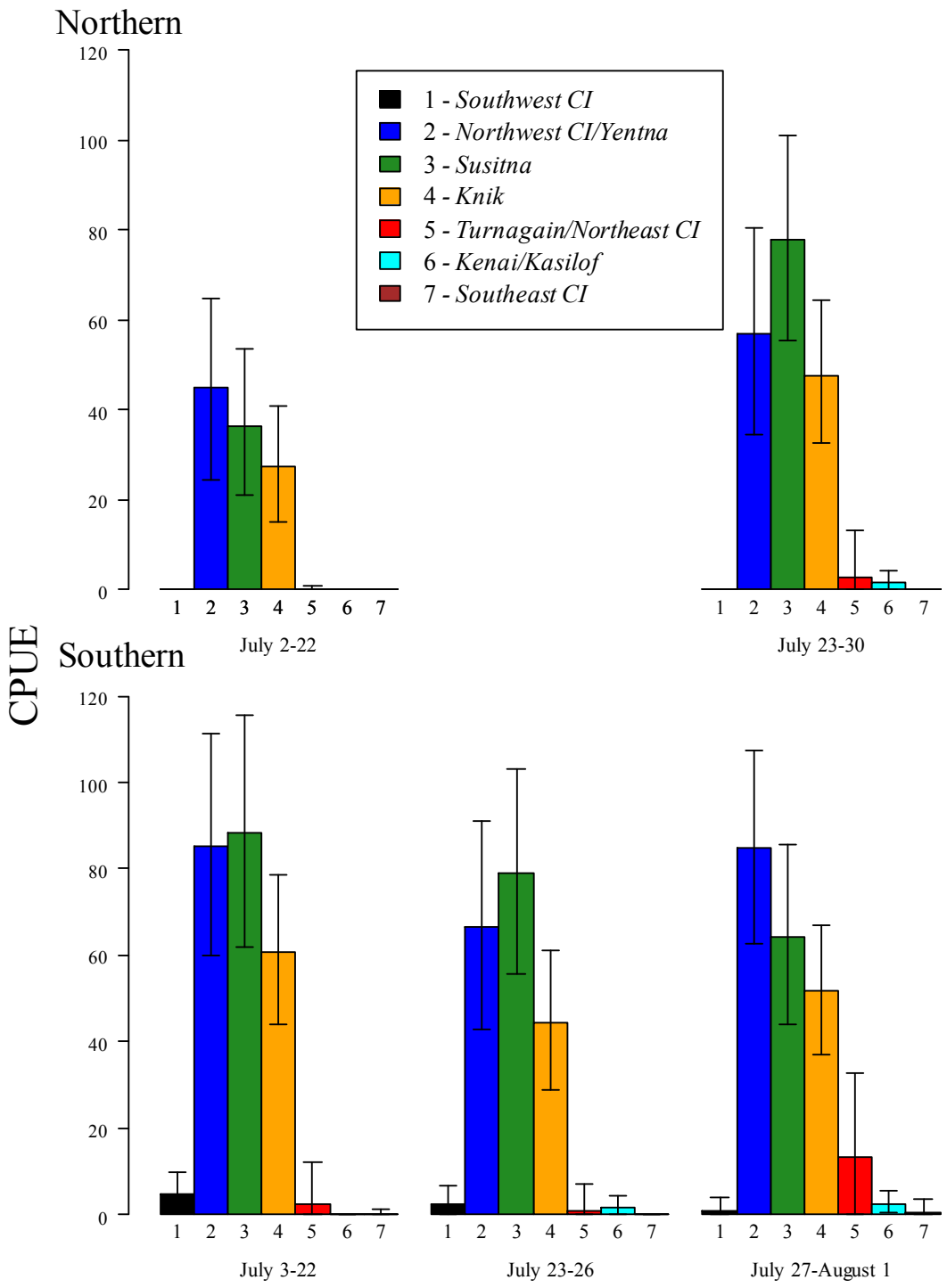


Figure 12.– **Northern and southern offshore test fishery by date in 2014**; CPUE estimates for coho salmon by stock and 90% credibility intervals.

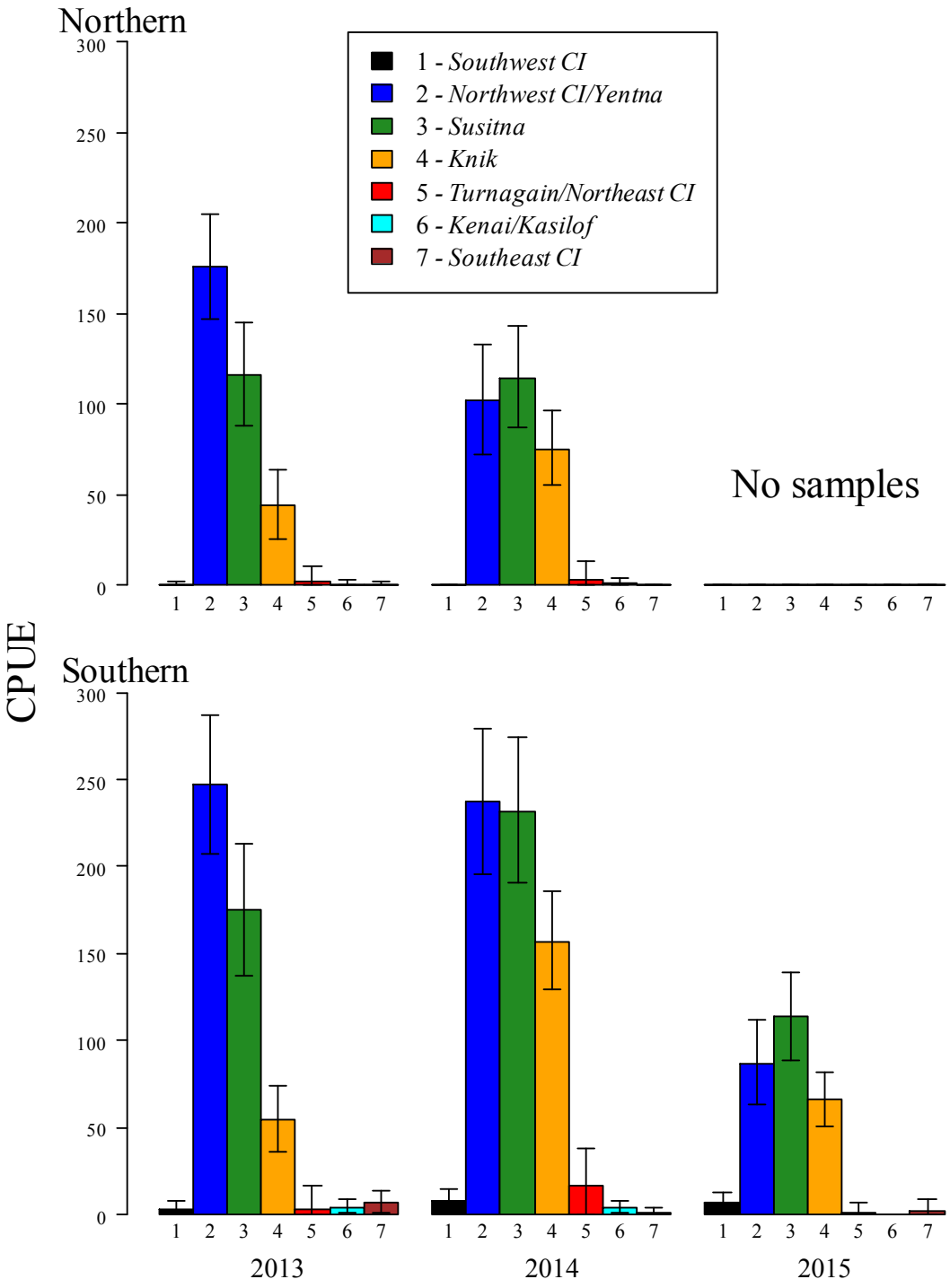


Figure 13.–**Northern and southern offshore test fishery stratified catch per unit effort (CPUE) estimates** and credibility intervals for coho salmon by stock for 2013, 2014, and 2015.

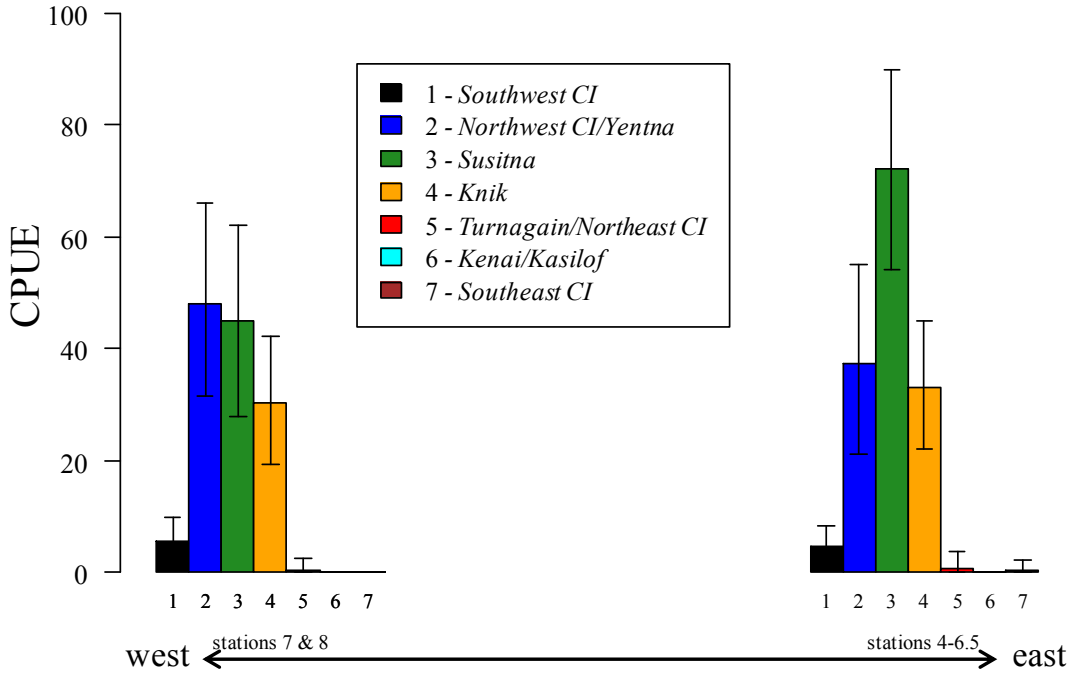


Figure 14.–**Southern offshore test fishery by test fish station in 2015**; CPUE estimates for coho salmon by stock and 90% credibility intervals. Estimates are ordered from west (left) to east (right) Cook Inlet.

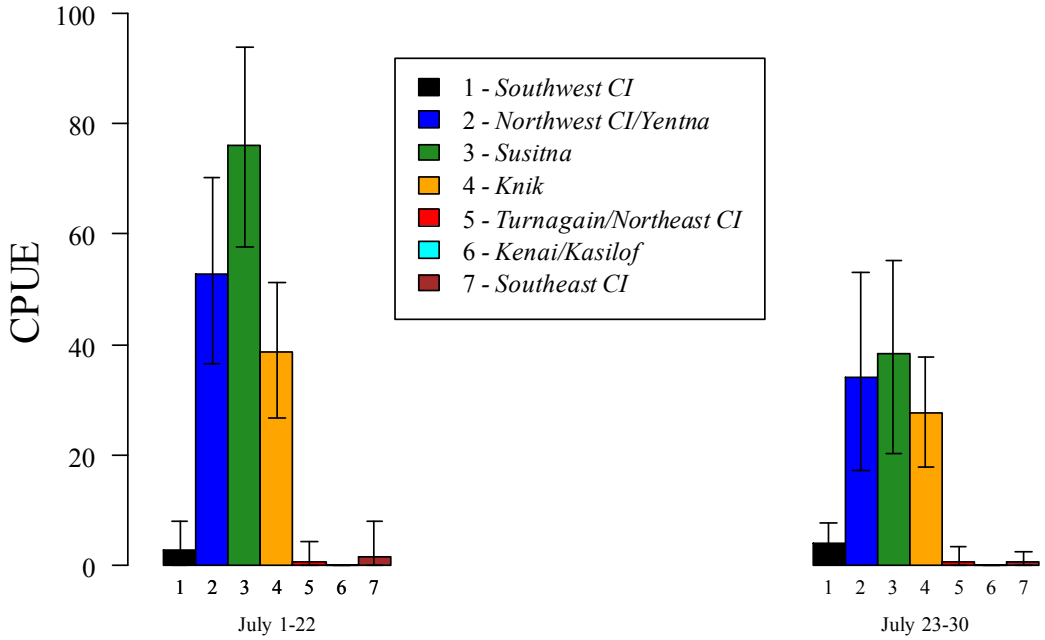


Figure 15.–**Southern offshore test fishery by date in 2015**; CPUE estimates for coho salmon by stock and 90% credibility intervals.

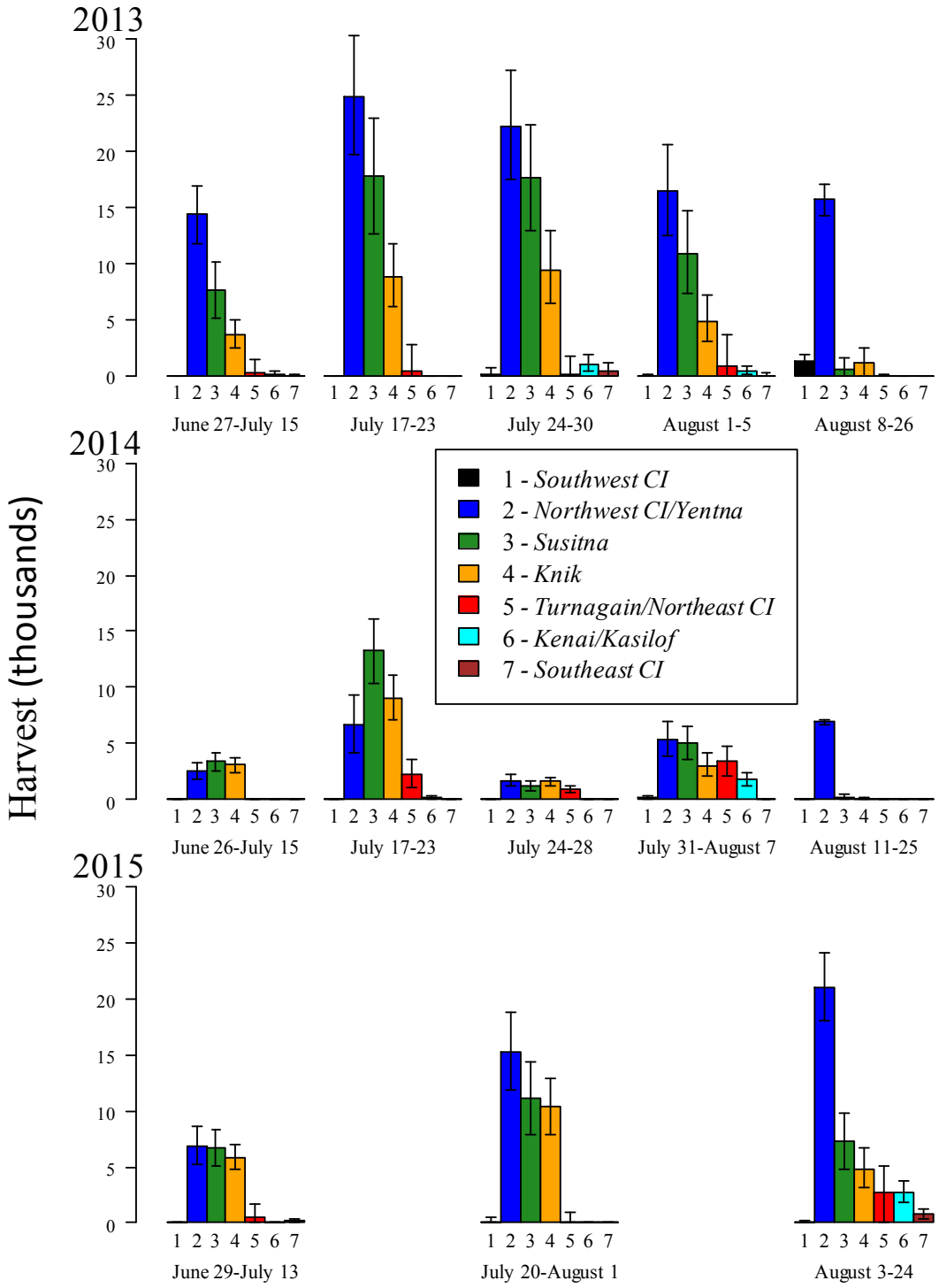


Figure 16.–**Central District drift gillnet fishery (excluding corridor-only periods) by date in 2013, 2014, and 2015**; harvest estimates and 90% credibility intervals for coho salmon by stock.

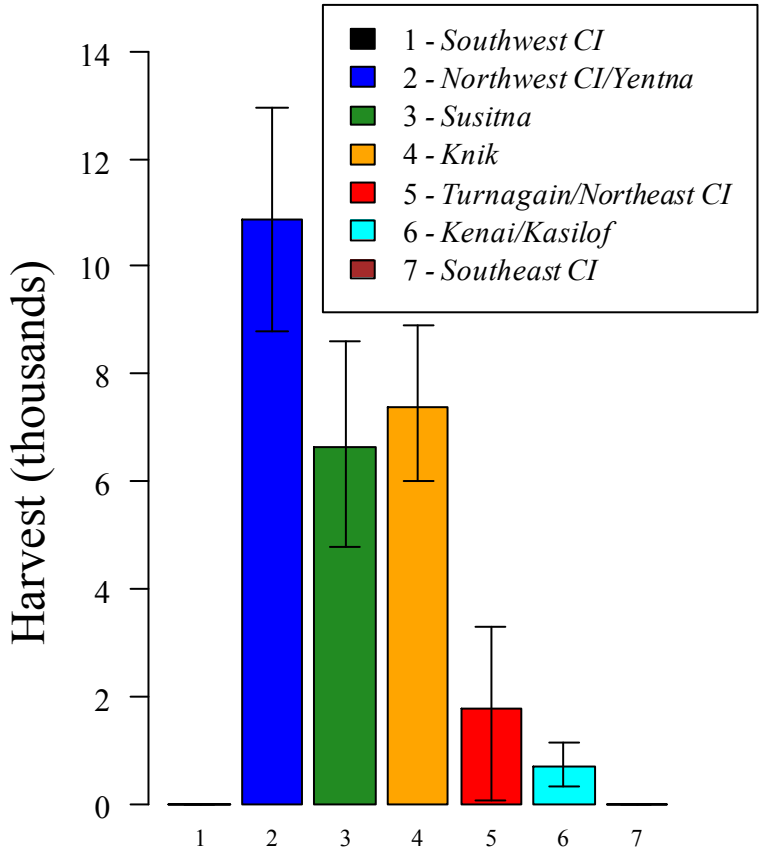


Figure 17.–**Central District drift gillnet fishery (corridor-only periods) July 11–August 5, 2015** harvest estimates and 90% credibility intervals for coho salmon by stock.

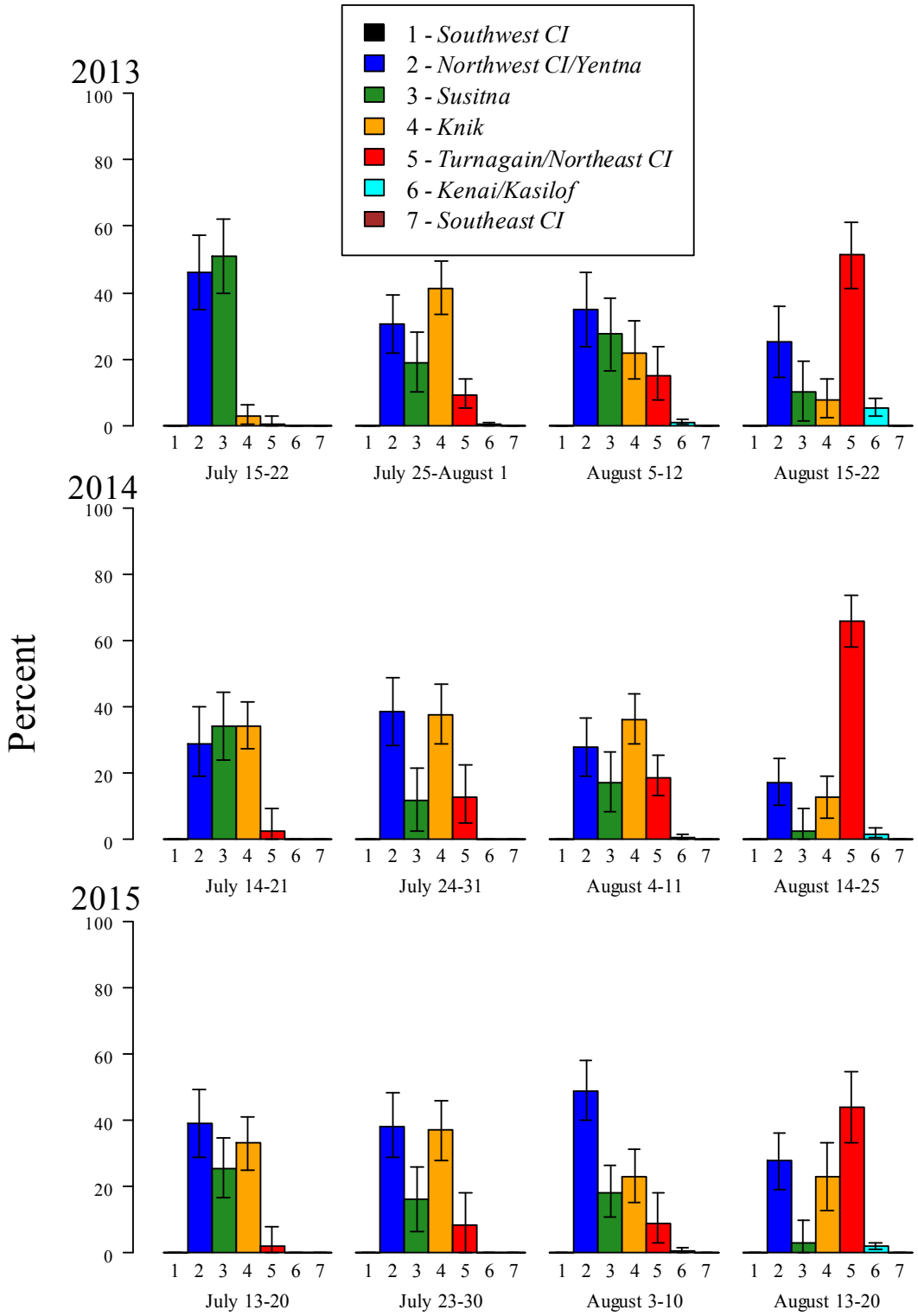


Figure 18.–**Northern District set gillnet fishery by date in 2013, 2014, and 2015**; stock composition estimates and 90% credibility intervals for coho salmon.

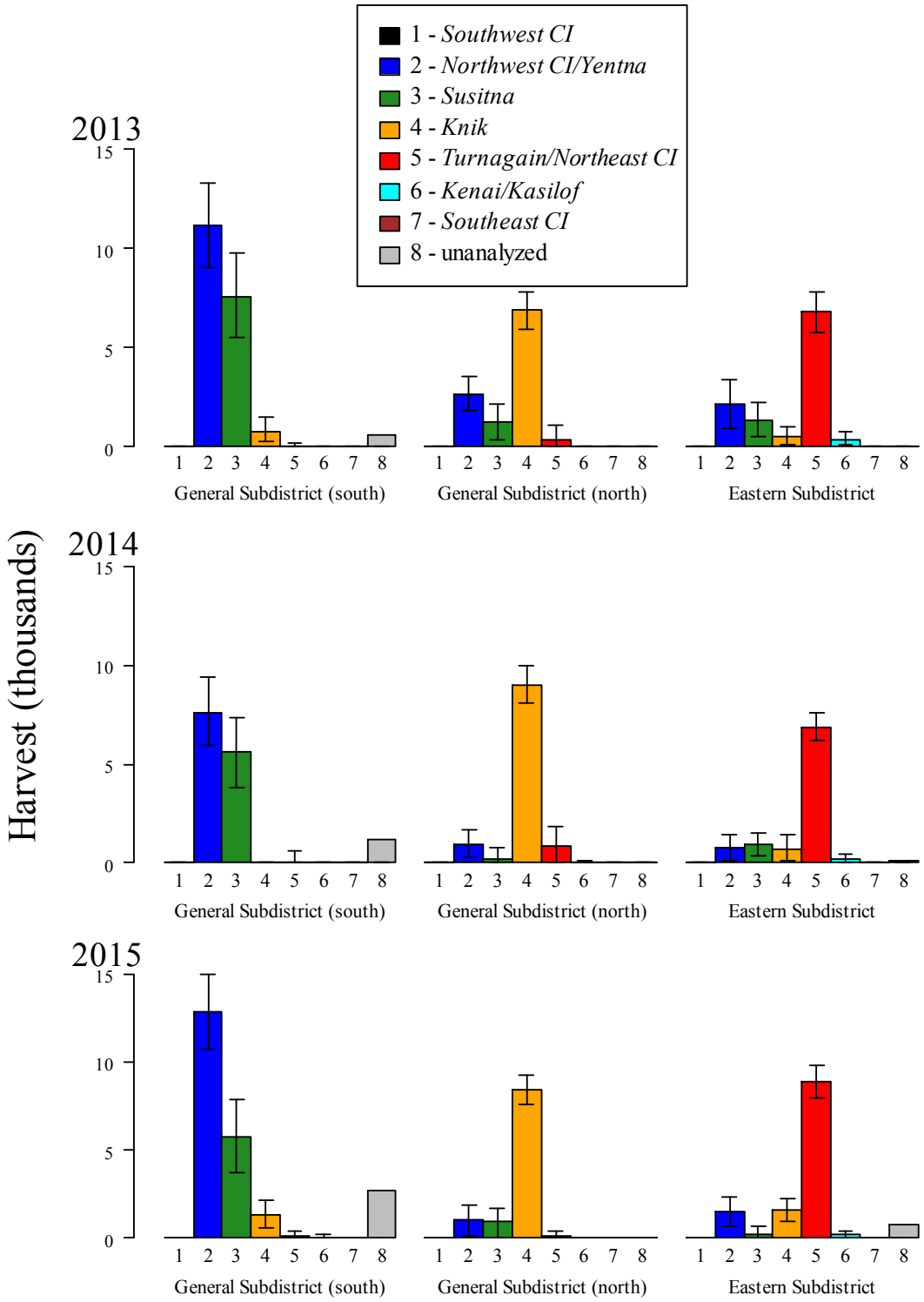


Figure 19.–**Northern District set gillnet fishery by area in 2013, 2014, and 2015**; harvest estimates and 90% credibility intervals for coho salmon by stock.

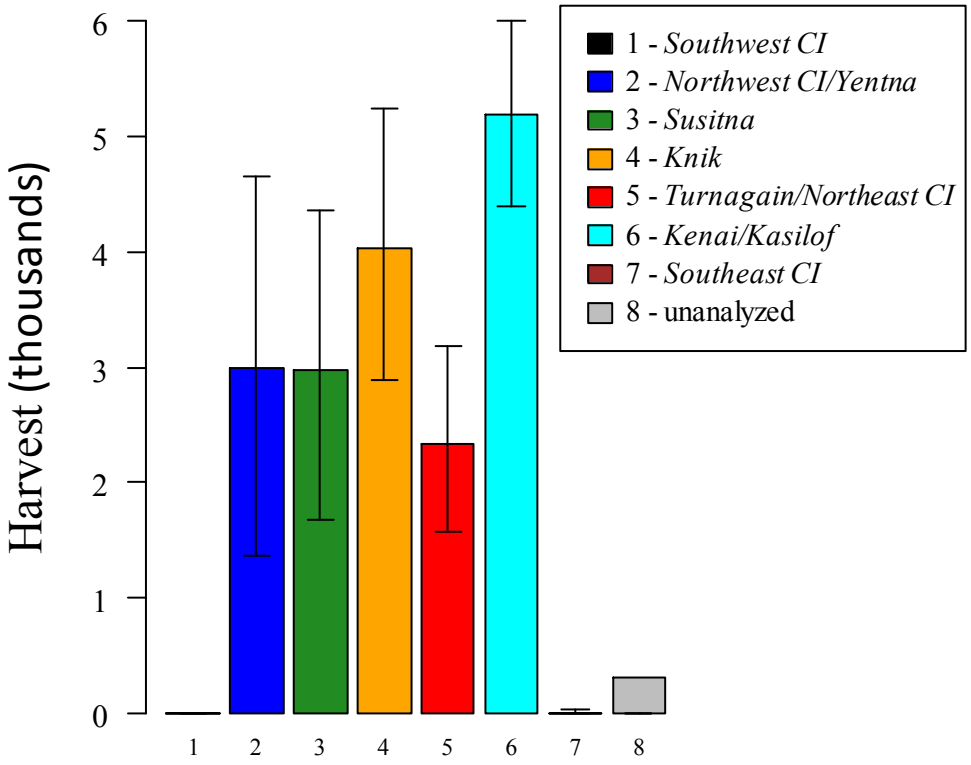


Figure 20.–**Upper Subdistrict (Central District) set gillnet fishery 2015**; harvest estimates and 90% credibility intervals for coho salmon by stock.

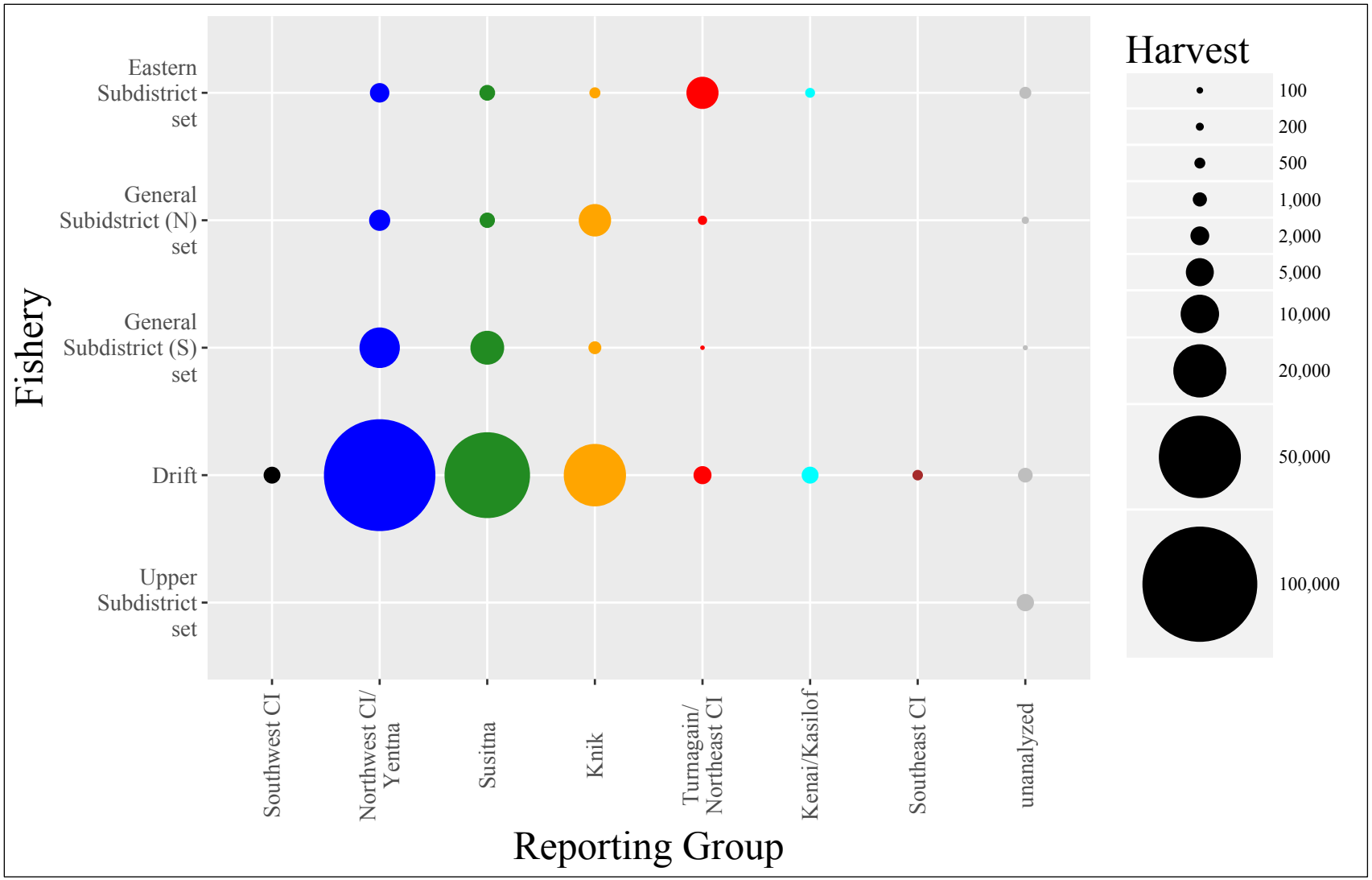


Figure 21.–Coho salmon harvest estimates by stock (reporting group) and Upper Cook Inlet commercial fishery in 2013. Gray circles indicate the portion of the total harvest from each fishery not included in the analysis (unanalyzed).

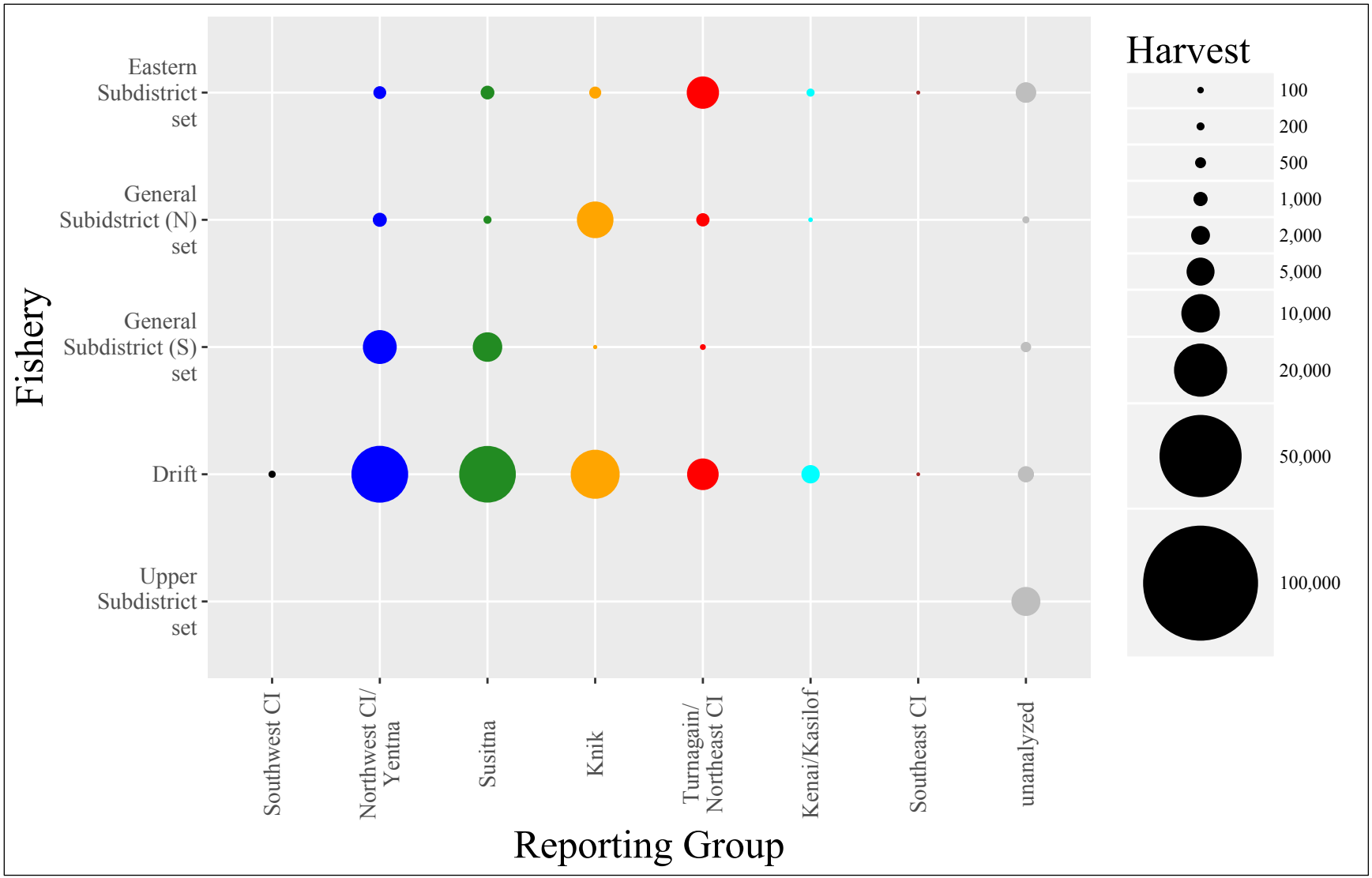


Figure 22.–Coho salmon harvest estimates by stock (reporting group) and Upper Cook Inlet commercial fishery in 2014. Gray circles indicate the portion of the total harvest from each fishery not included in the analysis (unanalyzed).

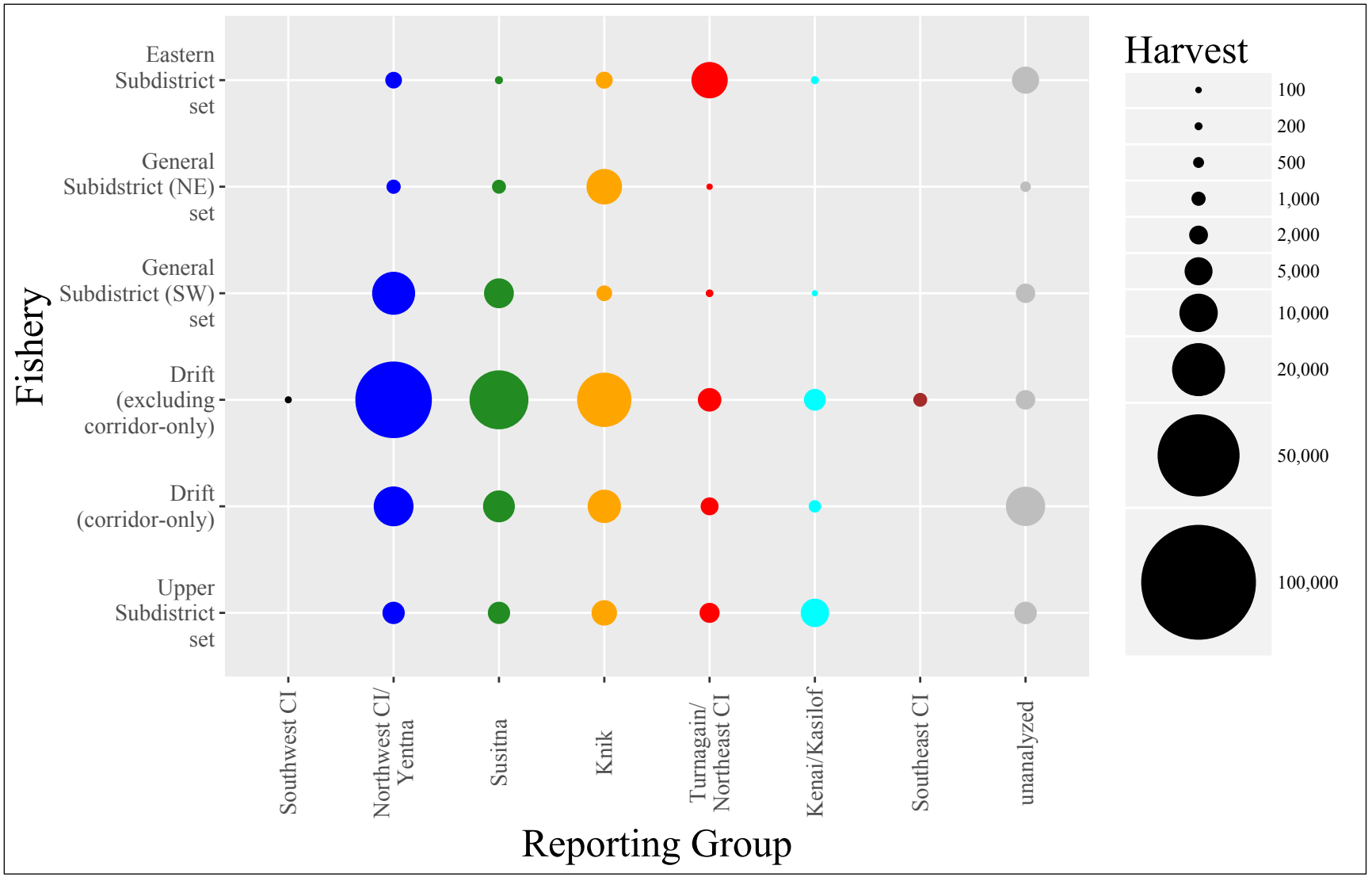


Figure 23.–Coho salmon harvest estimates and harvest not included in the analysis (unanalyzed) by stock (reporting group) and Upper Cook Inlet commercial fishery in 2015. Gray circles indicate the portion of the total harvest from each fishery not included in the analysis (unanalyzed).

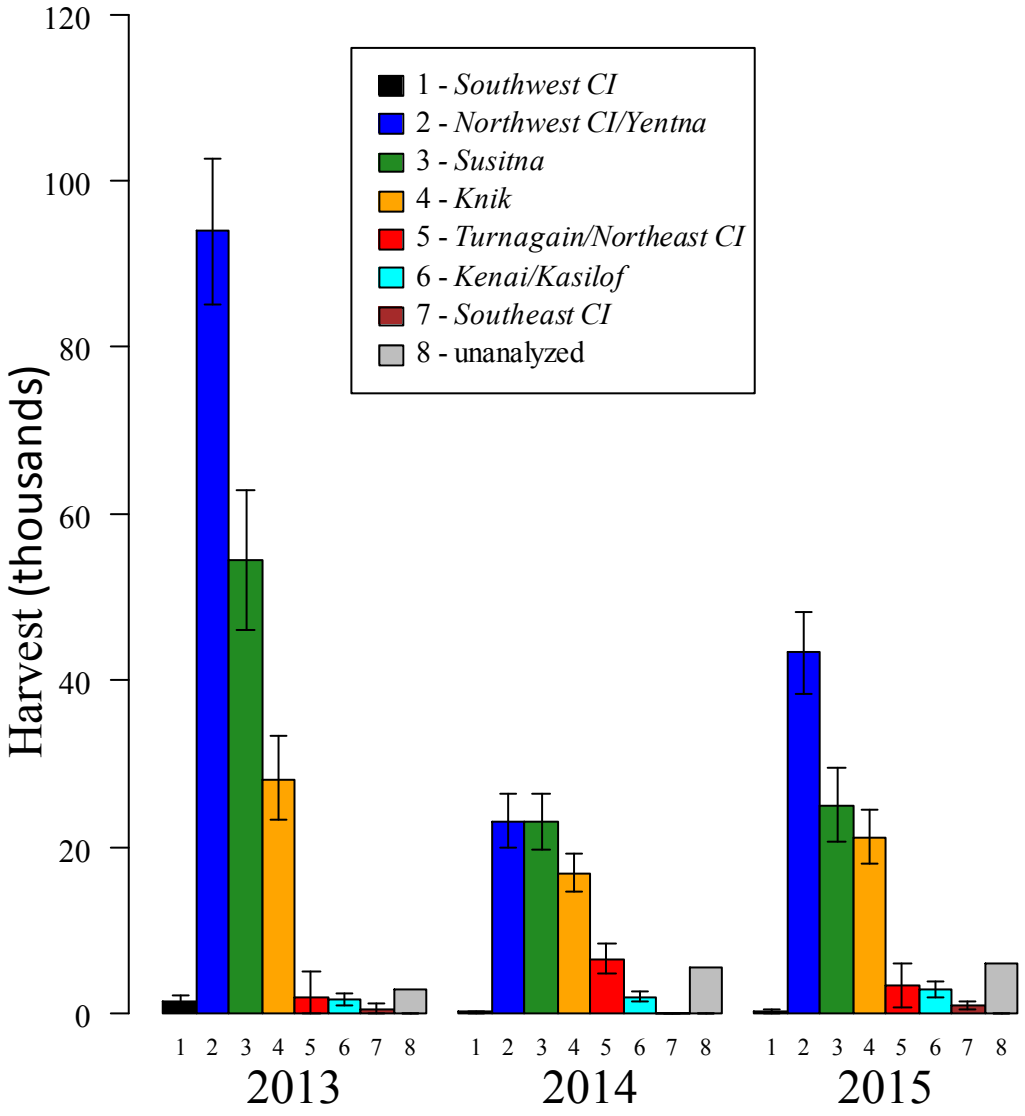


Figure 24.–**Central District drift gillnet fishery (excluding corridor-only periods)**; **stratified harvest estimates** and credibility intervals for coho salmon by stock for 2013, 2014, and 2015.

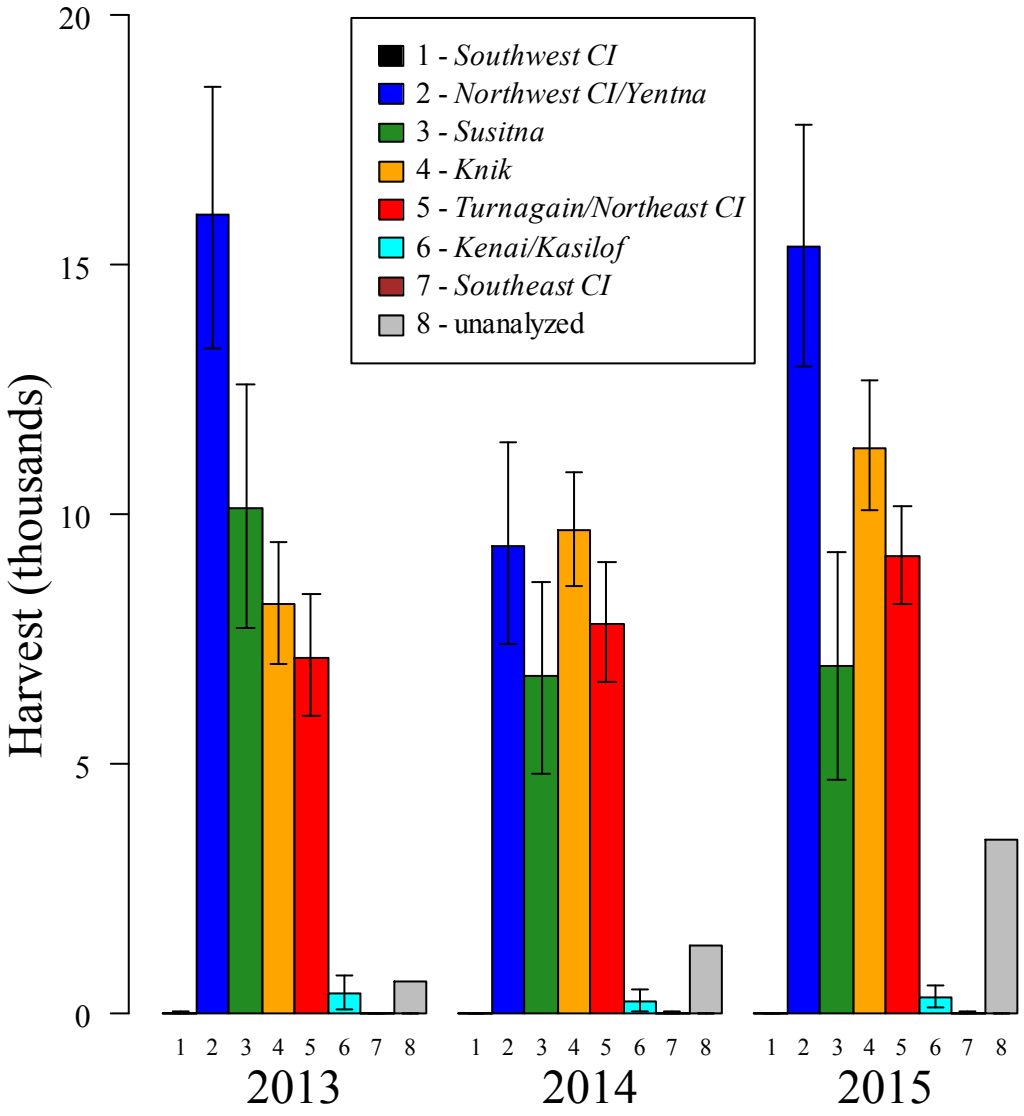


Figure 25.–**Northern District set gillnet fishery stratified harvest estimates** and credibility intervals for coho salmon by stock for 2013, 2014, and 2015.

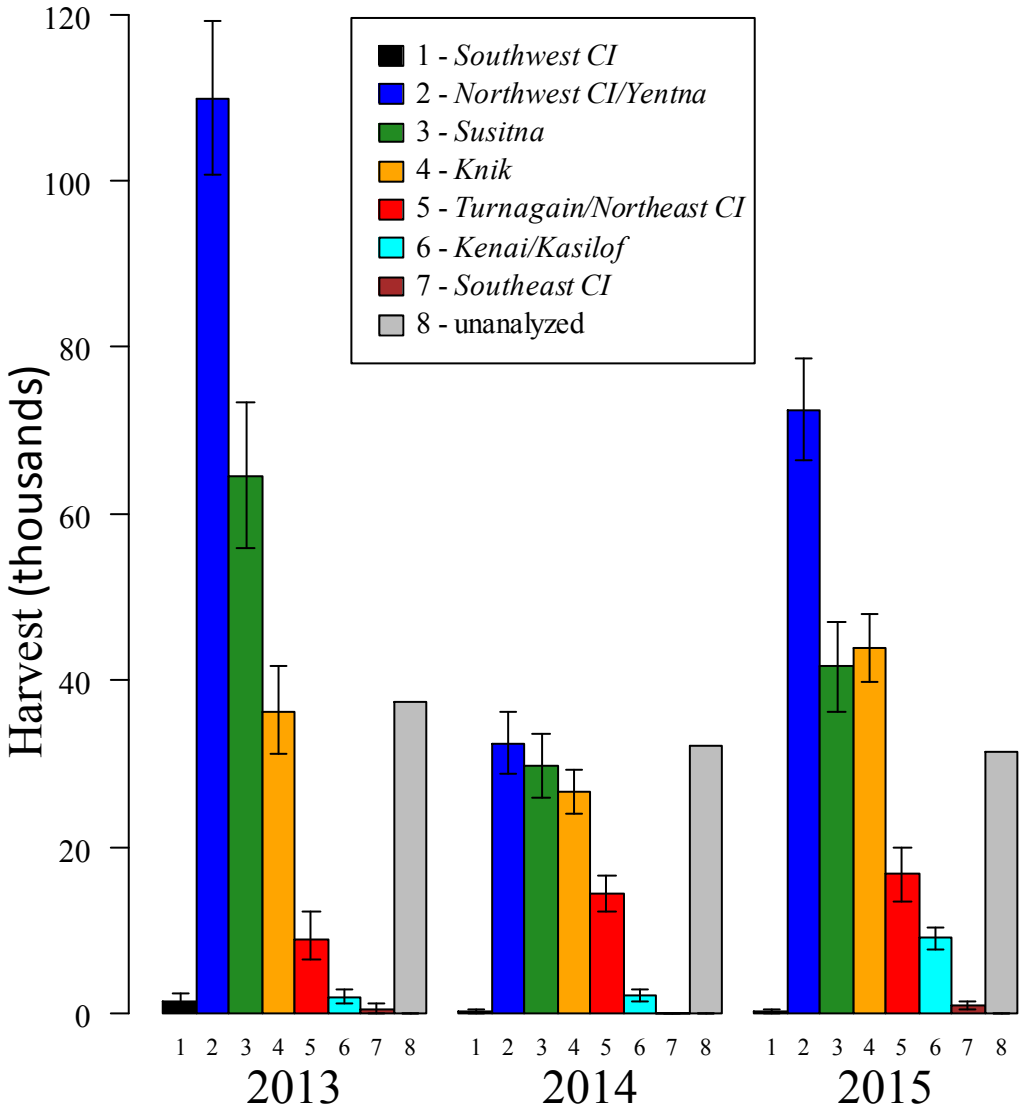


Figure 26.–**Overall Cook Inlet commercial fishery stratified harvest estimates** and credibility intervals for coho salmon by stock for 2013, 2014, and 2015.

APPENDIX A: SAMPLE COLLECTION INFORMATION, 2013–2015

Appendix A1.–Harvest location, sampling dates, numbers of samples collected, and number of samples analyzed for mixtures of coho salmon harvested in the Upper Cook Inlet commercial fishery in 2013, 2014, and 2015.

Harvest Location			Sample	Number of Fish		
District	Subdistrict/Fishery	Statistical Area(s)	Date	Sampled	Analyzed	Mixture
Central	Drift	244-60	7/4/2013	54	54	6/27–7/15
Central	Drift	244-61	7/8/2013	199	117	6/27–7/15
Central	Drift	244-56	7/11/2013	44	38	6/27–7/15
Central	Drift	244-60	7/15/2013	192	191	6/27–7/15
Central	Drift	244-60	7/18/2013	240	160	7/17–7/23
Central	Drift	244-60	7/22/2013	240	240	7/17–7/23
Central	Drift	244-60	7/25/2013	336	295	7/24–7/30
Central	Drift	244-60	7/29/2013	283	105	7/24–7/30
Central	Drift	244-60	8/1/2013	519	325	8/1–8/5
Central	Drift	244-60	8/5/2013	528	75	8/1–8/5
Central	Drift	244-60	8/8/2013	408	137	8/8–8/26
Central	Drift	244-60	8/12/2013	240	179	8/8–8/26
Central	Drift	244-60	8/15/2013	48	48	8/8–8/26
Central	Drift	244-60	8/22/2013	48	36	8/8–8/26
Central	Drift	244-60	7/3/2014	93	62	6/26–7/15
Central	Drift	244-60	7/7/2014	60	60	6/26–7/15
Central	Drift	244-60	7/10/2014	38	38	6/26–7/15
Central	Drift	244-60	7/14/2014	240	240	6/26–7/15
Central	Drift	244-60	7/17/2014	234	193	7/17–7/23
Central	Drift	244-60	7/21/2014	288	207	7/17–7/23
Central	Drift	244-57	7/24/2014	197	197	7/24–7/28
Central	Drift	244-57	7/28/2014	365	203	7/24–7/28
Central	Drift	244-57	7/31/2014	309	86	7/31–8/7
Central	Drift	244-60	8/4/2014	192	192	7/31–8/7
Central	Drift	244-60	8/7/2014	169	122	7/31–8/7
Central	Drift	244-60	8/11/2014	192	180	8/11–8/25
Central	Drift	244-60	8/14/2014	117	117	8/11–8/25
Central	Drift	244-60	8/18/2014	78	78	8/11–8/25
Central	Drift	244-60	7/6/2015	76	69	6/29–7/13
Central	Drift	244-60	7/9/2015	192	191	6/29–7/13
Central	Drift	244-60	7/13/2015	240	240	6/29–7/13
Central	Drift	244-60	7/20/2015	288	212	7/20–8/1
Central	Drift	244-60	7/27/2015	288	288	7/20–8/1
Central	Drift	244-60	8/3/2015	192	192	8/3–8/24
Central	Drift	244-60	8/6/2015	192	192	8/3–8/24

-continued-

Harvest Location			Sample	Number of Fish		
District	Subdistrict/Fishery	Statistical Area(s)	Date	Sampled	Analyzed	Mixture
Central	Drift	244-60	8/10/2015	288	162	8/3–8/24
Central	Drift	244-60	8/13/2015	144	48	8/3–8/24
Central	Drift	244-60	8/17/2015	144	40	8/3–8/24
Central	Drift	244-60	8/20/2015	96	58	8/3–8/24
Central	Drift	244-57	7/16/2015	240	142	7/11–8/5
Central	Drift	244-57	7/23/2015	288	288	7/11–8/5
Central	Drift	244-57	7/30/2015	240	238	7/11–8/5
Central	Upper Subdistrict	244-21 & 22	7/20/2015	11	11	7/20–8/10
Central	Upper Subdistrict	244-21 & 22	7/23/2015	20	20	7/20–8/10
Central	Upper Subdistrict	244-21 & 22	7/27/2015	24	24	7/20–8/10
Central	Upper Subdistrict	244-21 & 22	7/30/2015	6	6	7/20–8/10
Central	Upper Subdistrict	244-21 & 22	8/3/2015	19	19	7/20–8/10
Central	Upper Subdistrict	244-21 & 22	8/6/2015	20	20	7/20–8/10
Central	Upper Subdistrict	244-21 & 22	8/10/2015	24	24	7/20–8/10
Central	Upper Subdistrict	244-31	7/20/2015	1	1	7/20–8/10
Central	Upper Subdistrict	244-31	7/23/2015	1	1	7/20–8/10
Central	Upper Subdistrict	244-31	7/27/2015	2	2	7/20–8/10
Central	Upper Subdistrict	244-31	8/3/2015	11	11	7/20–8/10
Central	Upper Subdistrict	244-31	8/6/2015	2	2	7/20–8/10
Central	Upper Subdistrict	244-31	8/10/2015	11	6	7/20–8/10
Central	Upper Subdistrict	244-32	7/20/2015	4	4	7/20–8/10
Central	Upper Subdistrict	244-32	7/27/2015	2	2	7/20–8/10
Central	Upper Subdistrict	244-32	7/30/2015	2	2	7/20–8/10
Central	Upper Subdistrict	244-32	8/3/2015	8	8	7/20–8/10
Central	Upper Subdistrict	244-32	8/6/2015	10	10	7/20–8/10
Central	Upper Subdistrict	244-32	8/10/2015	10	10	7/20–8/10
Central	Upper Subdistrict	244-41 & 42	7/20/2015	20	20	7/20–8/10
Central	Upper Subdistrict	244-41 & 42	7/23/2015	20	20	7/20–8/10
Central	Upper Subdistrict	244-41 & 42	7/27/2015	20	20	7/20–8/10
Central	Upper Subdistrict	244-41 & 42	7/30/2015	20	20	7/20–8/10
Central	Upper Subdistrict	244-41 & 42	8/3/2015	141	50	7/20–8/10
Central	Upper Subdistrict	244-41 & 42	8/6/2015	144	52	7/20–8/10
Central	Upper Subdistrict	244-41 & 42	8/10/2015	144	35	7/20–8/10
Northern	Eastern Subdistrict	247-70, 80, & 90	7/4/2013	42	3	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	7/8/2013	21	3	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	7/15/2013	48	8	6/27–8/29

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Harvest Location			Sample	Number of Fish		
District	Subdistrict/Fishery	Statistical Area(s)	Date	Sampled	Analyzed	Mixture
Northern	Eastern Subdistrict	247-70, 80, & 90	7/18/2013	48	12	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	7/22/2013	48	7	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	7/25/2013	48	5	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	7/29/2013	96	22	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	8/1/2013	91	28	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	8/5/2013	139	42	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	8/8/2013	139	18	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	8/12/2013	144	53	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	8/15/2013	144	66	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	8/19/2013	96	54	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	8/22/2013	48	36	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	8/26/2013	89	22	6/27–8/29
Northern	Eastern Subdistrict	247-70, 80, & 90	7/14/2014	28	3	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	7/17/2014	27	5	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	7/21/2014	48	17	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	7/24/2014	29	29	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	7/28/2014	96	22	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	7/31/2014	96	31	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	8/4/2014	96	42	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	8/7/2014	96	57	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	8/11/2014	96	28	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	8/18/2014	96	90	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	8/21/2014	96	76	7/7–8/28
Northern	Eastern Subdistrict	247-70, 80, & 90	7/13/2015	48	13	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	7/16/2015	32	6	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	7/20/2015	48	30	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	7/23/2015	96	38	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	7/27/2015	96	32	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	7/30/2015	96	15	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	8/3/2015	96	10	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	8/6/2015	96	19	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	8/10/2015	96	31	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	8/13/2015	96	31	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	8/17/2015	96	31	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	8/20/2015	96	82	6/29–8/27
Northern	Eastern Subdistrict	247-70, 80, & 90	8/24/2015	96	62	6/29–8/27

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Harvest Location			Sample	Number of Fish		
District	Subdistrict/Fishery	Statistical Area(s)	Date	Sampled	Analyzed	Mixture
Northern	General Subdistrict	247-41, 42, & 43	7/15/2013	92	32	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	7/18/2013	139	16	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	7/22/2013	288	16	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	7/25/2013	144	18	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	7/29/2013	177	66	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	8/1/2013	288	78	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	8/5/2013	129	27	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	8/8/2013	260	44	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	8/12/2013	192	48	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	8/15/2013	144	29	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	8/19/2013	19	1	7/8–8/22
Northern	General Subdistrict	247-41, 42, & 43	7/14/2014	44	6	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	7/17/2014	38	15	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	7/21/2014	48	48	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	7/24/2014	48	29	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	7/28/2014	96	35	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	7/31/2014	96	90	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	8/4/2014	48	48	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	8/7/2014	96	74	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	8/11/2014	93	24	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	8/14/2014	37	15	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	8/18/2014	47	16	7/7–8/25
Northern	General Subdistrict	247-41, 42, & 43	7/13/2015	48	46	7/6–8/24
Northern	General Subdistrict	247-41, 42, & 43	7/16/2015	15	15	7/6–8/24
Northern	General Subdistrict	247-41, 42, & 43	7/20/2015	48	48	7/6–8/24
Northern	General Subdistrict	247-41, 42, & 43	7/23/2015	48	37	7/6–8/24
Northern	General Subdistrict	247-41, 42, & 43	7/27/2015	96	96	7/6–8/24
Northern	General Subdistrict	247-41, 42, & 43	8/3/2015	96	38	7/6–8/24
Northern	General Subdistrict	247-41, 42, & 43	8/6/2015	96	43	7/6–8/24
Northern	General Subdistrict	247-41, 42, & 43	8/10/2015	96	39	7/6–8/24
Northern	General Subdistrict	247-41, 42, & 43	8/13/2015	48	48	7/6–8/24
Northern	General Subdistrict	247-41, 42, & 43	8/17/2015	48	36	7/6–8/24
Northern	General Subdistrict	247-10, 20, & 30	7/8/2013	28	11	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	7/15/2013	61	59	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	7/18/2013	137	26	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	7/22/2013	155	56	7/1–8/29

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Harvest Location			Sample	Number of Fish		
District	Subdistrict/Fishery	Statistical Area(s)	Date	Sampled	Analyzed	Mixture
Northern	General Subdistrict	247-10, 20, & 30	7/25/2013	264	24	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	7/29/2013	240	43	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	8/1/2013	217	62	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	8/5/2013	336	61	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	8/8/2013	130	16	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	8/12/2013	262	27	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	8/15/2013	126	12	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	8/19/2013	78	2	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	8/29/2013	87	2	7/1–8/29
Northern	General Subdistrict	247-10, 20, & 30	7/7/2014	71	7	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	7/10/2014	48	6	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	7/14/2014	16	10	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	7/17/2014	55	39	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	7/21/2014	192	62	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	7/28/2014	118	31	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	7/31/2014	144	101	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	8/4/2014	96	36	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	8/7/2014	96	36	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	8/11/2014	96	18	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	8/18/2014	144	14	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	8/21/2014	96	36	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	8/25/2014	96	4	7/7–8/25
Northern	General Subdistrict	247-10, 20, & 30	7/6/2015	8	1	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	7/9/2015	48	22	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	7/13/2015	96	25	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	7/16/2015	96	9	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	7/20/2015	96	29	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	7/23/2015	50	50	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	7/27/2015	223	60	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	8/3/2015	144	63	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	8/6/2015	58	52	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	8/10/2015	192	31	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	8/13/2015	96	15	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	8/17/2015	96	17	6/29–8/27
Northern	General Subdistrict	247-10, 20, & 30	8/20/2015	96	26	6/29–8/27

Appendix A2.–Date when samples were collected, numbers of samples collected, number of samples analyzed for temporal mixtures of coho salmon harvested in the Northern District (Statistical areas include 247-10, 20, 30, 41, 42, 43, 70, 80, and 90) of Upper Cook Inlet in 2013, 2014, and 2015.

	Number of Fish[a]		
Sample Date	Sampled	Analyzed	Mixture
7/15/2013	201	170	7/15–22
7/18/2013	324	89	7/15–22
7/22/2013	491	141	7/15–22
7/25/2013	456	57	7/25–8/1
7/29/2013	513	149	7/25–8/1
8/1/2013	596	194	7/25–8/1
8/5/2013	604	165	8/5–12
8/8/2013	529	89	8/5–12
8/12/2013	598	147	8/5–12
8/15/2013	414	199	8/15–22
8/19/2013	193	111	8/15–22
8/22/2013	48	65	8/15–22
7/14/2014	88	30	7/14–21
7/17/2014	120	91	7/14–21
7/21/2014	288	219	7/14–21
7/24/2014	77	108	7/24–31
7/28/2014	310	78	7/24–31
7/31/2014	336	213	7/24–31
8/4/2014	240	148	8/4–11
8/7/2014	288	176	8/4–11
8/11/2014	285	76	8/4–11
8/14/2014	181	43	8/14–21
8/18/2014	239	209	8/14–21
8/21/2014	192	88	8/14–21
7/13/2015	192	98	7/13–20
7/16/2015	143	48	7/13–20
7/20/2015	192	204	7/13–20
7/23/2015	194	122	7/23–30
7/27/2015	415	266	7/23–30
7/30/2015	96	12	7/23–30
8/3/2015	336	181	8/3–10
8/6/2015	250	175	8/3–10
8/10/2015	384	144	8/3–10
8/13/2015	240	155	8/13–20
8/17/2015	240	126	8/13–20
8/20/2015	192	219	8/13–20

[a] The number of fish sampled and analyzed includes some of the same fish used to form Northern District spatial mixtures (Appendix A1).

APPENDIX B: COOK INLET OFFSHORE TEST FISHERY CATCH PER UNIT EFFORT BY STATION AND DATE, 2013–2015

Appendix B1.– Estimated coho salmon catch per unit effort (CPUE) by date and station for Cook Inlet northern offshore test fishery in 2013.

	Station Number							
Date	1	2	3	4	5	6	7	Total
1 July	0.0	0.0	0.0	-	-	-	-	0.0
2 July	0.0	0.0	0.0	0.0	0.0	1.6	0.0	1.6
3 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 July	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.8
6 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 July	0.8	0.0	2.1	3.2	1.6	0.8	0.0	8.5
9 July	0.0	0.8	0.7	0.0	1.6	0.0	1.6	4.7
10 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11 July	0.0	0.0	0.0	1.8	0.9	0.0	0.0	2.7
12 July	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.8
13 July	0.0	0.0	1.6	16.6	22.8	0.0	1.6	42.6
14 July	0.7	0.6	1.2	4.9	9.6	4.0	1.8	22.8
15 July	1.3	0.0	8.4	9.1	27.5	0.8	1.6	48.7
16 July	0.0	0.0	2.1	2.1	0.0	0.8	2.4	7.4
17 July	0.0	0.0	1.4	0.8	0.8	0.0	0.0	3.0
18 July	0.0	0.0	4.0	6.0	0.0	0.8	2.4	13.2
19 July	0.0	0.7	1.4	0.0	0.0	1.6	2.4	6.1
20 July	0.8	0.0	3.0	4.0	0.8	3.2	0.0	11.8
21 July	0.0	0.0	0.8	0.0	0.0	0.8	0.8	2.4
22 July	0.0	0.0	4.0	0.0	0.0	0.8	0.0	4.8
23 July	2.7	0.8	0.0	2.4	0.8	0.8	0.0	7.5
24 July	0.0	0.0	0.8	4.0	0.9	0.9	2.4	9.0
25 July	0.8	1.6	0.8	13.3	1.6	0.8	0.8	19.7
26 July	0.0	0.8	3.2	3.2	10.4	12.8	37.8	68.2
27 July	0.0	3.2	3.6	4.8	2.4	2.7	4.0	20.7
28 July	0.0	0.0	0.9	0.9	2.7	0.8	2.7	8.0
29 July	0.0	0.9	0.0	0.0	6.4	0.8	0.8	8.9
30 July	0.0	0.0	0.0	4.8	3.2	0.0	7.2	15.2
Total	7.1	10.2	40.0	81.9	94.8	34.8	70.3	339.1
Percent	2.1	3.0	11.8	24.2	28.0	10.3	20.7	100.0

Note: Dashes indicate days/stations that we not fished.

Appendix B2.–Estimated coho salmon catch per unit effort (CPUE) by date and station for Cook Inlet northern offshore test fishery in 2014.

	Station Number								
Date	2	3	4	5	8	9	10	11	Total
1 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 July	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.8
4 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5 July	-	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6
6 July	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.9	1.5
7 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9 July	0.0	0.9	0.0	0.0	0.0	0.8	0.0	0.0	1.7
10 July	-	-	-	-	-	-	-	-	0.0
11 July	0.0	0.0	1.7	0.0	0.0	0.0	0.8	0.0	2.5
12 July	0.0	-	-	-	-	-	-	-	0.0
13 July	-	-	-	-	-	-	-	0.0	0.0
14 July	0.0	0.0	0.0	0.0	0.8	0.0	-	-	0.8
15 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16 July	2.5	0.0	1.7	0.9	0.0	0.9	0.9	0.8	7.7
17 July	0.0	2.3	0.0	0.8	0.0	0.0	0.8	0.0	3.9
18 July	0.0	1.4	0.8	18.8	-	2.3	1.4	0.0	24.7
19 July	-	-	-	-	-	-	-	-	0.0
20 July	0.0	1.5	8.9	0.0	6.4	1.6	0.7	0.0	19.1
21 July	0.0	2.2	8.4	10.3	0.8	11.9	2.3	1.5	37.4
22 July	0.0	2.4	2.3	4.1	0.0	0.0	0.0	0.0	8.8
23 July	-	6.6	8.2	7.1	11.2	4.5	0.0	0.0	37.6
24 July	-	4.0	5.7	32.0	13.8	4.6	0.0	0.0	60.1
25 July	0.0	2.4	0.0	5.1	2.4	0.0	1.6	0.0	11.5
26 July	7.9	1.4	2.3	1.5	2.1	0.0	0.0	0.0	15.2
27 July	0.6	0.0	0.7	1.6	0.8	0.8	0.0	0.0	4.5
28 July	2.3	2.3	0.0	1.6	14.0	-	0.0	0.0	20.2
29 July	0.0	0.8	0.0	1.6	0.0	2.4	0.8	0.0	5.6
30 July	3.7	0.8	21.1	0.0	3.2	3.8	0.0	0.0	32.6
Total	17.0	30.2	61.8	86.2	55.5	33.6	9.3	3.2	296.8
Percent	6	10	21	29	19	11	3	1	100

Note: Dashes indicate days/stations that we not fished.

Appendix B3.–Estimated coho salmon catch per unit effort (CPUE) by date and station for Cook Inlet southern offshore test fishery in 2013.

	Station Number						
Date	4	5	6	6.5	7	8	Total
1 July	0.0	0.0	1.4	0.0	0.0	0.0	1.4
2 July	0.0	0.7	0.0	0.0	0.8	0.0	1.5
3 July	0.0	0.8	0.0	3.0	4.3	0.0	8.1
4 July	0.0	0.8	0.8	3.7	-	-	5.3
5 July	0.0	1.6	0.8	0.0	0.7	0.0	3.1
6 July	0.0	0.0	3.6	0.0	0.0	0.0	3.6
7 July	0.0	0.0	0.0	7.8	1.3	0.0	9.1
8 July	0.0	-	-	2.6	0.7	0.0	3.3
9 July	0.0	5.4	0.0	2.1	0.0	0.0	7.5
10 July	0.0	13.3	0.0	0.0	0.0	0.0	13.3
11 July	1.6	1.8	5.7	3.0	0.0	0.0	12.1
12 July	0.0	0.0	0.0	0.0	0.0	0.6	0.6
13 July	0.0	2.2	2.9	-	-	-	5.1
14 July	-	-	-	-	-	-	0.0
15 July	0.7	0.7	0.0	3.7	0.8	0.8	6.7
16 July	0.0	22.4	14.3	0.0	13.1	5.1	54.9
17 July	-	-	0.0	-	-	-	0.0
18 July	-	-	-	-	-	-	0.0
19 July	-	-	-	-	-	-	0.0
20 July	3.6	8.9	11.9	-	-	-	24.4
21 July	1.6	0.0	9.7	0.0	3.9	0.0	15.2
22 July	0.0	0.7	36.9	12.2	26.4	0.0	76.2
23 July	0.0	1.5	2.1	0.7	0.0	1.5	5.8
24 July	0.0	13.6	33.0	0.0	0.0	0.0	46.6
25 July	0.0	4.0	0.0	33.3	107.0	-	144.3
26 July	0.8	0.0	0.8	0.5	5.5	0.8	8.4
27 July	0.0	0.0	0.0	0.6	0.8	1.5	2.9
28 July	0.0	0.0	3.8	0.7	0.8	1.6	6.9
29 July	0.0	0.0	12.3	16.8	-	-	29.1
30 July	0.0	0.0	-	-	-	-	0.0
Total	8.3	78.4	140.0	90.7	166.1	11.9	495.4
Percent	2	16	28	18	34	2	100

Note: Dashes indicate days/stations that we not fished.

Appendix B4.–Estimated coho salmon catch per unit effort (CPUE) by date and station for Cook Inlet southern offshore test fishery in 2014.

	Station Number						
Date	4	5	6	6.5	7	8	Total
1 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 July	0.0	0.0	0.0	0.0	0.8	0.0	0.8
4 July	0.0	0.0	0.8	2.6	0.8	0.0	4.2
5 July	0.8	0.0	2.4	5.7	0.0	0.8	9.7
6 July	0.8	1.6	0.0	1.5	1.5	0.7	6.1
7 July	0.0	1.1	0.6	0.8	0.0	0.0	2.5
8 July	0.0	0.0	0.8	0.0	0.8	0.0	1.6
9 July	0.0	2.3	0.0	0.8	0.8	0.0	3.9
10 July	0.0	0.8	0.7	0.0	0.0	0.0	1.5
11 July	0.0	0.0	0.6	0.0	0.0	0.0	0.6
12 July	0.0	0.0	0.0	0.0	0.0	0.8	0.8
13 July	0.0	8.9	0.0	0.7	0.0	0.0	9.6
14 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15 July	0.0	0.0	4.8	0.8	0.0	0.7	6.3
16 July	0.0	0.7	4.5	10.7	14.5	1.5	31.9
17 July	1.4	7.3	5.5	0.8	0.9	2.3	18.2
18 July	0.0	5.9	4.8	7.9	32.0	2.8	53.4
19 July	0.0	2.0	7.4	2.2	1.1	0.0	12.7
20 July	0.6	11.1	3.2	0.0	8.6	0.8	24.3
21 July	0.0	0.7	0.0	0.8	15.5	0.8	17.8
22 July	0.0	0.0	1.6	5.6	26.8	2.5	36.5
23 July	0.0	1.1	7.2	20.0	48.0	0.0	76.3
24 July	0.0	5.7	20.7	37.3	18.3	1.7	83.7
25 July	3.0	3.5	0.8	15.5	1.6	0.8	25.2
26 July	0.0	0.0	0.0	0.8	5.6	3.7	10.1
27 July	0.0	0.0	8.2	18.1	3.2	0.0	29.5
28 July	0.0	35.6	0.0	0.0	0.0	0.0	35.6
29 July	0.0	0.8	0.0	7.8	2.5	27.0	38.1
30 July	0.0	0.0	29.6	23.3	13.7	5.0	71.6
31 July	0.0	2.3	9.4	3.0	0.0	0.0	14.7
1 August	0.0	6.3	3.7	16.5	0.8	0.8	28.1
Total	6.6	97.7	117.3	183.2	197.8	52.7	655.3
Percent	1	15	18	28	30	8	100

Appendix B5.– Estimated coho salmon catch per unit effort (CPUE) by date and station for Cook Inlet southern offshore test fishery in 2015.

	Station Number						
Date	4	5	6	6.5	7	8	Total
1 July[a]	0.6	0.0	0.0	0.0	0.0	0.0	0.6
2 July	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 July	0.0	0.0	0.0	0.8	0.0	0.0	0.8
4 July	0.0	0.0	2.1	0.7	0.0	0.0	2.8
5 July	0.0	0.8	0.8	0.8	0.0	0.0	2.4
6 July	0.0	0.0	4.4	0.0	0.0	0.0	4.4
7 July	0.0	0.8	0.0	0.8	0.0	0.0	1.6
8 July	0.0	0.0	0.8	0.0	0.0	0.8	1.6
9 July	0.0	0.8	0.0	0.8	0.0	0.0	1.6
10 July	0.0	0.7	8.3	2.6	2.4	0.0	14.0
11 July	0.0	0.0	0.0	2.9	3.0	0.0	5.9
12 July	0.0	1.5	7.0	0.8	9.6	3.8	22.7
13 July	0.0	1.5	1.4	0.0	1.5	0.8	5.2
14 July	0.0	2.7	0.0	0.9	2.3	1.5	7.4
15 July	0.0	0.0	1.4	1.6	2.4	0.0	5.4
16 July[a]	0.0	0.4	1.5	0.0	3.0	1.4	6.3
17 July[a]	0.0	0.8	1.5	0.4	3.5	1.2	7.4
18 July[a]	0.0	1.2	0.5	0.5	4.1	1.0	7.3
19 July	0.0	1.6	1.6	0.7	4.6	0.8	9.3
20 July	0.0	2.0	0.7	0.0	3.9	2.4	9.0
21 July	0.0	0.0	3.2	0.8	0.0	0.0	4.0
22 July	0.0	2.9	13.2	15.0	19.0	2.3	52.4
23 July	0.8	1.7	2.3	4.3	1.4	0.0	10.5
24 July	0.0	0.0	0.0	0.8	3.4	0.8	5.0
25 July	0.8	0.8	0.8	1.5	6.7	12.6	23.2
26 July	1.0	1.5	1.9	4.7	3.5	4.6	17.2
27 July	0.0	0.0	0.0	0.8	1.6	5.3	7.7
28 July	0.0	0.0	0.0	0.0	0.8	0.0	0.8
29 July	0.8	4.0	4.5	1.6	6.4	6.3	23.6
30 July	0.0	3.4	10.3	2.5	0.0	0.8	17.0
Total	4.0	29.1	68.2	46.3	83.1	46.4	277.1
Percent	1	11	25	17	30	17	100

[a] Not all stations fished due to weather; the data for missing stations were interpolated.

APPENDIX C: UPPER COOK INLET COMMERCIAL COHO SALMON HARVEST BY STATISTICAL AREA AND DATE 2013–2015

Appendix C1.–Commercial coho salmon harvest by area and date in Upper Cook Inlet, 2013.

Upper Subdistrict Set Gillnet							
	Statistical Area						
Date	244-21	244-22	244-25	244-31	244-32	244-41	244-42
06/27	1	1		1			
06/30	1	2		2			
07/01	1						
07/04	10	8					
07/06	5	5		2			
07/08	3	5		3	2	36	34
07/10	6	5					
07/11	6	3		2	4	54	49
07/15	11	16		10	7	176	250
07/17			9				
07/18	26	33	2	8	3	102	47
07/20	27	38		11	11	103	90
07/21			14				
07/22			14				
07/23	43	42	11	13	29	137	149
07/24			13				
07/25			19				
07/26			34				
07/27			56				
07/28			127				
07/29			22				
07/30			48				
08/01			82				
08/02			182				

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Central District-West Side Set Gillnet									
	Statistical Area								
Date	245-10	245-20	245-30	245-40	245-50	245-55	245-60	246-10	246-20
06/24			1						
07/01			5					43	
07/04			20					113	16
07/06			44						
07/08			38		4			224	19
07/11			76		6			325	36
07/13			70						
07/15			63		5	17		1,088	54
07/18			136		26			1,689	278
07/20			101						
07/22			232		73	21	105	2,723	334
07/25			542		72			1,731	351
07/27			559						
07/29			398		221			1,814	191
08/01	45		1,423		145			1,992	795
08/03			220						
08/05			262		569			4,295	659
08/08			42		221			2,455	1,093
08/12	116				213			1,208	267
08/15	160							737	190
08/19	386							52	
08/23	24								
08/26									80

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Northern District Set Gillnet

	Statistical Area								
Date	247-10	247-20	247-30	247-41	247-42	247-43	247-70	247-80	247-90
06/24									1
06/27	9								1
07/01	24	17					5		2
07/04	24	232			1		49	6	21
07/08	28	413	26		5	25	20	1	6
07/11	21	433	132	12	21	68	57	5	6
07/15	14	1,903	639	532	64	333	194	44	20
07/18		659	565	240	171	63	269	59	12
07/22	215	771	1,360	289	175	33	128	24	55
07/25	19	842	515	151	165	194	80	17	57
07/29	180	1,550	428	463	518	911	428	119	89
08/01	558	1,641	571	732	711	818	488	119	150
08/05	585	1,410	575	143	362	289	324	369	539
08/08	442	742		160	325	785	283	62	184
08/12	235	976		295	243	823	717	391	450
08/15	8	475		98	353	399	593	628	718
08/19		77			35	33	366	330	903
08/22	5	111			12		106	329	632
08/26	13	46	18			17	91	147	422
08/29		86							41
09/02							133	93	234
09/05								29	84
09/09									23

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Central District Drift Gillnet						
	Statistical Area					
Date	244-26	244-56	244-57	244-50, 60, 70 & 245-70, 80, & 90	244-61	245-10
06/24				1		
06/27				72		
07/01				901		
07/04				4,194		
07/06					27	
07/08				5,997		
07/11		360				
07/13		447				
07/15				14,034		
07/17	7	1,835				
07/18				12,679		
07/19		1,198				
07/20		1,804				
07/21	1	1,644				
07/22	4			31,828		
07/23		1,084				
07/24		677				
07/25				37,024		
07/26	8	624				
07/27		1,225				
07/28	6	236				
07/29				11,193		
07/30		204				
08/01	4			21,790		
08/02	1					
08/05				11,882		
08/08				7,816		
08/12				3,782		
08/15				3,069		
08/19				2,360		409
08/21						234
08/22				843		
08/23						449
08/26				989		599
08/30						1,079
09/02						73
09/11						52
09/12				26		

Note: See Figures 1 and 3 for descriptions of statistical areas.

Appendix C2.–Commercial coho salmon harvest by area and date in Upper Cook Inlet, 2014.

Upper Subdistrict Set Gillnet							
	Statistical Area						
Date	244-21	244-22	244-25	244-31	244-32	244-41	244-42
06/23		1					
06/26		1					
06/28	1						
06/30				1			
07/03	3	2		1			
07/05	1						
07/07	9	6		2			
07/09	4	5		1	3	10	28
07/12	18	6		5			
07/15	9	35		3			
07/16			2				
07/17	9	10	8	8	22	141	106
07/18			3				
07/19			42				
07/20			11				
07/21			17				
07/22			16				
07/23	50	69	3	7	20	74	91
07/24			6				
07/25			34				
07/26			26				
07/27			16				
07/28			36				
07/29			31				
07/30			41				
08/01			43				
08/02	135	54	10	41	78	343	197
08/04	316	96		115	95	503	315
08/06					406	1,362	745

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Central District-West Side Set Gillnet									
	Statistical Area								
Date	245-10	245-20	245-30	245-40	245-50	245-55	245-60	246-10	246-20
06/26								4	
06/30			2					19	3
07/03			16					89	5
07/05			21						
07/07			18					83	45
07/10			19						
07/12			111						
07/14			80		6			118	17
07/17			132		8			602	249
07/19			284						
07/21			573		54		63	2,061	640
07/24			496		32		103	2,172	923
07/26			625						
07/28			454		90		214	1,285	252
07/31			737		83			1,047	73
08/02			547						
08/04			372		269			1,085	500
08/07			336		69			404	353
08/11					173			627	47
08/13								299	
08/14			35					3	
08/18								106	37
08/21								152	
08/25								57	

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Northern District Set Gillnet

	Statistical Area								
Date	247-10	247-20	247-30	247-41	247-42	247-43	247-70	247-80	247-90
06/23		1			1				
06/26	5	1					2	1	
06/30	11	12	1	3			6	1	1
07/03	8	57	10				13	1	2
07/07		144	30	1	3	8	55	61	1
07/10	1	91	26	29	22		12	13	
07/14	36	124	74	48	59	46	41	6	7
07/17	59	727	287	134	53	98	64	30	36
07/21	90	624	909	687	244	440	225	61	88
07/24	88	1,071	466	285	204	336	461	187	30
07/28	170	384	180	130	465	372	156	112	27
07/31	415	1,624	808	985	505	529	231	237	140
08/04	267	714	164	397	439	715	478	269	70
08/07	235	651		519	542	568	479	637	207
08/11	316	111		233	276	225	381		152
08/14	128	210		7	183	225	192	24	
08/18	305	557			140	309	410	1,031	257
08/21	29	327		155	52	278	282	867	270
08/25	315	148		25	31	57	242	579	280
08/28	131	43		26	34		65		
09/01	53	82			12		192	497	319
09/04		70					13	144	
09/08		30							

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Central District Drift Gillnet

	Statistical Area					
Date	244-26	244-56	244-57	244-50, 60, 70 & 245-70, 80, & 90	244-61	245-10
06/19				3		
06/23				18		
06/26				222		
06/30				459		
07/03				1,124		
07/05					13	
07/07				901		
07/09		167				
07/10				846		
07/11		313				
07/12				1,739		
07/13		82				
07/14				2,899		
07/15		246				
07/16	2					
07/17	1			12,934		
07/18	11		1,234			
07/19	3		1,189			
07/20	0		1,002			
07/21	0			12,547		
07/22	5		910			
07/23			1,462			
07/24			1,567			
07/25	2		1,547			
07/26			287			
07/27			123			
07/28	1		1,888			
07/29	11					
07/30	11					
07/31			1,678			
08/01	9					
08/02	5					
08/04				11,142		
08/07				5,816		
08/11				2,878		

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Central District Drift Gillnet						
	Statistical Area					
Date	244-26	244-56	244-57	244-50, 60, 70 & 245-70, 80, & 90	244-61	245-10
08/14				1,468		
08/18				961		
08/21				1,003		
08/25				794		
08/28				138		
08/29						519
09/01				1,936		
09/02						1,361
09/04				903		
09/05						375
09/08				140		
09/09						37

Note: See Figures 1 and 3 for descriptions of statistical areas.

Appendix C3.–Commercial coho salmon harvest by area and date in Upper Cook Inlet, 2015.

Upper Subdistrict Set Gillnet							
	Statistical Area						
Date	244-21	244-22	244-25	244-31	244-32	244-41	244-42
06/24	1						
06/29	1						
07/02	5	4		2			
07/04	1			2			
07/06	13	9		1			
07/07			1				
07/08			3				
07/09	12	16		2	5	66	61
07/11	14	6	1	8	2	27	47
07/13			12				
07/14	39	33		7	4	77	162
07/15	19	15		1			
07/16	39	40		14	21	179	391
07/17			12				
07/18	66	80	3	75			
07/19	56	31		13			
07/20	44	26		8	35	108	138
07/21	26	12	1	2			
07/22	38	53	7	4			
07/23	176	201		17	13	384	692
07/24			12				
07/25	110	93	2	22	18	226	192
07/26	273	152		33	16	466	145
07/27	109	80		18	21	124	241
07/28	68	32	3	4			
07/29	116	90		11	16	122	232
07/30	46	34		17	17	109	206
07/31	72	21	15	8			
08/01	79	83	8	27	16	184	197
08/02			46		55	261	229
08/03	279	131		68	117	303	260
08/05	304	239		100	130	403	261
08/06	315	119		105	143	247	190
08/08	362	268		43	183	546	332
08/09	456	171		56	111	370	305
08/10	412	160		43	184	385	380
08/12					207	468	331

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Central District-West Side Set Gillnet

	Statistical Area								
Date	245-10	245-20	245-30	245-40	245-50	245-55	245-60	246-10	246-20
06/25									1
06/29			4					19	
07/02			7					60	7
07/06			24	1	1			203	32
07/09			64		2			568	65
07/13			269		1			876	59
07/16			150					497	56
07/18			149						
07/20			268	2	36		121	960	211
07/23			432		13		245	1,341	243
07/25			387						
07/27			326		64		306	904	345
07/30			269		109		166	1,182	402
08/01			308					1,579	267
08/03			297		122			1,311	158
08/06			216		126			1,009	33
08/08			16					894	49
08/10					189			364	70
08/13	12				88			484	82
08/15								425	59
08/17	10		23		145			773	83
08/20			32		77				

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Northern District Set Gillnet									
	Statistical Area								
Date	247-10	247-20	247-30	247-41	247-42	247-43	247-70	247-80	247-90
06/25							1		
06/29	1	1							
07/02	6	11					7	1	
07/06	19	48			2		11	5	19
07/09	191	498	137	139	22	100	111	51	7
07/13	328	433	273	134	32	89	128	93	131
07/16	71	241	96	183	69	17	143	110	12
07/20	101	870	323	368	554	541	515	184	102
07/23	71	1,474	594	383	269	235	283	409	286
07/27	155	998	1,233	1,218	416	768	566	278	33
07/30	181	971	761	519	388	188	264	128	11
08/03	316	1,714	647	210	476	172	239	20	23
08/06	269	1,932	297	373	344	119	274	188	55
08/10	101	1,197	28	173	190	424	466	242	133
08/13	207	440		392	312	190	428	262	228
08/17	146	566	54		76	80	392	300	139
08/20	103	689	26		127	36	523	669	858
08/24	155	803		112	108		368	762	649
08/27	109	299					150	833	317
08/31	31	102							
09/03	46	36					152	400	127
09/07	83	238					212	485	163
09/10	47	51					502		254
09/14	15	36					47		65
09/21		104					187		
09/24								84	
09/28		10							

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Central District Drift Gillnet						
	Statistical Area					
Date	244-26	244-56	244-57	244-50, 60, 70 & 245-70, 80, & 90	244-61	245-10
06/22				51		
06/25				71		
06/29				351		
06/30					11	
07/02				643		
07/04					2	
07/06				1,777		
07/07	1					
07/08	9					
07/09				3,217		
07/10	1					
07/11		327				
07/12	4					
07/13	58			14,226		
07/14		792				
07/16			1,512			
07/17	102					
07/18	15					
07/20				13,718		
07/21	6					
07/22	30					
07/23			6,826			
07/24	51					
07/25			5,523			
07/26			2,405			
07/27				5,697		
07/28			1,504			
07/29			1,856			
07/30	10		1,319			
07/31			1,911			
08/01				17,578		
08/02	24		1,379			
08/03				15,145		
08/05			2,051			
08/06				7,294		

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Central District Drift Gillnet

	Statistical Area					
Date	244-26	244-56	244-57	244-50, 60, 70 & 245-70, 80, & 90	244-61	245-10
08/07			392			
08/08				4,764		
08/09			52			
08/10				2,926		
08/12			170			
08/13				3,013		
08/17				2,617		
08/18						426
08/20				2,316		
08/21						449
08/24				1,399		
08/25						358
08/28						332
08/31				24		
09/01						380
09/03				1051		
09/04						928
09/07				730		
09/08						374
09/11						113
09/15						107
09/17				302		

Note: See Figures 1 and 3 for descriptions of statistical areas.

APPENDIX D: CENTRAL DISTRICT DRIFT GILL NET STOCK COMPOSTION AND STOCK-SPECIFIC HARVEST BY DATE, 2013–2015

Appendix D1.–Central District drift gillnet fishery, 2013: Temporal strata stock composition (%) and stock-specific harvest estimates, including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

Dates: 6/27–7/15	Stock Composition (n = 400)				Harvest = 26,032		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	4	0	8
Northwest CI/Yentna	55.4	45.5	65.0	5.9	14,423	11,840	16,917
Susitna	29.2	19.6	39.1	5.9	7,596	5,097	10,168
Knik	14.2	9.7	19.1	2.9	3,694	2,536	4,970
Turnagain/Northeast CI	0.9	0.0	5.4	1.9	241	0	1,400
Kenai/Kasilof	0.2	0.0	1.3	0.5	50	0	344
Southeast CI	0.1	0.0	0.7	0.3	23	0	171

Dates: 7/1–7/23	Stock Composition (n = 400)				Harvest = 52,072		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.0	2	0	1
Northwest CI/Yentna	47.9	37.8	58.3	6.2	24,960	19,670	30,332
Susitna	34.1	24.4	44.1	6.0	17,771	12,698	22,957
Knik	17.0	11.8	22.6	3.3	8,874	6,145	11,782
Turnagain/Northeast CI	0.9	0.0	5.2	1.8	454	0	2,721
Kenai/Kasilof	0.0	0.0	0.0	0.1	7	0	3
Southeast CI	0.0	0.0	0.0	0.1	4	0	2

Dates: 7/24–7/30	Stock Composition (n = 392)				Harvest = 51,183		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.3	0.0	1.3	0.5	141	0	671
Northwest CI/Yentna	43.6	34.1	53.2	5.8	22,317	17,452	27,241
Susitna	34.4	25.4	43.6	5.5	17,614	12,995	22,329
Knik	18.5	12.7	25.3	3.8	9,461	6,502	12,936
Turnagain/Northeast CI	0.4	0.0	3.3	1.2	189	0	1,697
Kenai/Kasilof	2.1	0.9	3.6	0.8	1,076	479	1,838
Southeast CI	0.8	0.0	2.2	0.8	385	0	1,149

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Appendix D1.–Page 2 of 2.

Dates: 8/1–8/5	Stock Composition (n = 399)				Harvest = 33,672		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.2	0.1	9	0	51
Northwest CI/Yentna	49.1	37.3	61.0	7.2	16,547	12,565	20,551
Susitna	32.4	21.7	43.6	6.7	10,926	7,307	14,697
Knik	14.4	9.0	21.3	3.8	4,842	3,022	7,168
Turnagain/Northeast CI	2.7	0.0	10.8	4.0	897	0	3,631
Kenai/Kasilof	1.2	0.4	2.4	0.6	406	131	809
Southeast CI	0.1	0.0	0.9	0.4	44	0	316

Dates: 8/8–8/26	Stock Composition (n = 400)				Harvest = 18,859		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	7.3	4.7	10.2	1.7	1,368	895	1,917
Northwest CI/Yentna	83.5	76.0	90.5	4.4	15,748	14,335	17,059
Susitna	2.7	0.0	8.2	2.7	511	1	1,538
Knik	6.4	0.1	13.4	4.1	1,203	13	2,535
Turnagain/Northeast CI	0.1	0.0	0.9	0.4	23	0	166
Kenai/Kasilof	0.0	0.0	0.1	0.1	5	0	25
Southeast CI	0.0	0.0	0.0	0.1	2	0	1

Note: The 90% credibility intervals of harvest estimates may not include the point estimate for the very low harvest estimates.

Note: Stock composition and harvest estimates may not sum to 100% due to rounding errors.

Note: n is the final number of samples used in genetic analyses.

Appendix D2.–Central District drift gillnet fishery, 2014: Temporal strata stock composition (%) and stock-specific harvest estimates, including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

Dates: 6/26–7/15	Stock Composition (n = 398)				Harvest = 9,011		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	1	0	1
Northwest CI/Yentna	27.8	19.3	36.7	5.3	2,501	1,738	3,310
Susitna	37.6	28.5	46.8	5.6	3,392	2,568	4,220
Knik	34.2	26.8	41.9	4.6	3,085	2,414	3,776
Turnagain/Northeast CI	0.1	0.0	0.3	0.7	10	0	27
Kenai/Kasilof	0.2	0.0	0.8	0.3	22	0	69
Southeast CI	0.0	0.0	0.0	0.1	1	0	0

Dates: 7/17–7/23	Stock Composition (n = 396)				Harvest = 31,278		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	2	0	1
Northwest CI/Yentna	21.2	13.1	30.0	5.1	6,616	4,104	9,371
Susitna	42.5	33.3	51.7	5.6	13,299	10,401	16,172
Knik	29.0	22.9	35.2	3.8	9,056	7,151	11,022
Turnagain/Northeast CI	7.1	3.5	11.2	2.4	2,206	1,094	3,515
Kenai/Kasilof	0.3	0.0	0.9	0.3	98	5	289
Southeast CI	0.0	0.0	0.0	0.0	1	0	0

Dates: 7/24–7/28	Stock Composition (n = 392)				Harvest = 5,412		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	0	0	0
Northwest CI/Yentna	31.4	23.0	40.1	5.2	1,697	1,243	2,171
Susitna	21.1	13.4	29.1	4.8	1,139	725	1,574
Knik	29.9	23.2	37.1	4.2	1,617	1,256	2,005
Turnagain/Northeast CI	17.3	12.3	23.4	3.5	939	667	1,266
Kenai/Kasilof	0.3	0.0	1.0	0.3	18	0	55
Southeast CI	0.0	0.0	0.0	0.1	1	0	0

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Dates: 7/31–8/7	Stock Composition (n = 391)				Harvest = 18,636		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.7	0.1	1.8	0.5	138	23	328
Northwest CI/Yentna	28.8	20.4	37.6	5.2	5,375	3,805	7,012
Susitna	26.8	18.8	35.1	5.0	4,996	3,498	6,542
Knik	16.3	11.2	22.4	3.4	3,038	2,080	4,168
Turnagain/Northeast CI	18.0	10.9	25.4	4.4	3,350	2,038	4,725
Kenai/Kasilof	9.3	6.4	12.5	1.9	1,737	1,200	2,337
Southeast CI	0.0	0.0	0.0	0.1	2	0	1

Dates: 8/11–8/25	Stock Composition (n = 368)				Harvest = 7,104		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	1	0	0
Northwest CI/Yentna	96.9	93.0	99.6	2.1	6,885	6,607	7,077
Susitna	1.9	0.0	5.9	2.0	136	0	421
Knik	0.8	0.0	2.9	1.0	57	0	208
Turnagain/Northeast CI	0.3	0.0	1.3	0.5	18	0	91
Kenai/Kasilof	0.1	0.0	0.5	0.3	6	0	37
Southeast CI	0.0	0.0	0.0	0.1	1	0	0

Note: The 90% credibility intervals of harvest estimates may not include the point estimate for the very low harvest estimates.
Note: Stock composition and harvest estimates may not sum to 100% due to rounding errors.
Note: n is the final number of samples used in genetic analyses.

Appendix D3.–Central District drift gillnet fishery (excluding corridor-only periods), 2015: Temporal strata stock composition (%) and stock-specific harvest estimates, including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

Dates: 6/29–7/13	Stock Composition (n = 494)				Harvest = 20,214		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	1	0	0
Northwest CI/Yentna	34.2	26.0	42.7	5.1	6,922	5,247	8,632
Susitna	33.1	25.0	41.3	5.0	6,693	5,057	8,349
Knik	29.1	23.7	34.6	3.3	5,882	4,789	6,996
Turnagain/Northeast CI	2.4	0.0	8.1	2.9	486	0	1,628
Kenai/Kasilof	0.2	0.0	0.7	0.3	41	0	132
Southeast CI	0.9	0.2	1.9	0.5	189	49	388

Dates: 7/20–8/1	Stock Composition (n = 488)				Harvest = 36,993		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.3	0.0	1.3	0.5	108	0	479
Northwest CI/Yentna	41.3	32.1	50.8	5.7	15,286	11,877	18,809
Susitna	30.0	21.3	38.8	5.3	11,088	7,885	14,346
Knik	28.0	21.3	35.1	4.2	10,375	7,871	12,970
Turnagain/Northeast CI	0.3	0.0	2.7	1.0	121	0	993
Kenai/Kasilof	0.0	0.0	0.1	0.2	12	0	20
Southeast CI	0.0	0.0	0.0	0.1	4	0	1

Dates: 8/3–8/24	Stock Composition (n = 536)				Harvest = 39,474		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.1	0.0	0.4	0.2	27	0	167
Northwest CI/Yentna	53.4	45.9	61.0	4.6	21,084	18,108	24,090
Susitna	18.3	12.1	25.0	3.9	7,240	4,774	9,849
Knik	12.2	8.0	16.8	2.7	4,805	3,162	6,648
Turnagain/Northeast CI	7.0	0.0	12.9	3.8	2,766	0	5,097
Kenai/Kasilof	7.1	4.8	9.6	1.4	2,788	1,910	3,774
Southeast CI	1.9	0.9	3.3	0.7	764	346	1,284

Note: The 90% credibility intervals of harvest estimates may not include the point estimate for the very low harvest estimates.
Note: Stock composition and harvest estimates may not sum to 100% due to rounding errors.
Note: n is the final number of samples used in genetic analyses.

Appendix D4.–Central District drift gillnet fishery (corridor-only periods), 2015: Stock composition (%) and stock-specific harvest estimates, including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

Dates: 7/11–8/5	Stock Composition (n = 564)				Harvest = 27,405		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.0	1	0	0
Northwest CI/Yentna	39.6	32.0	47.3	4.7	10,854	8,778	12,964
Susitna	24.3	17.5	31.5	4.3	6,657	4,786	8,619
Knik	26.9	22.0	32.4	3.2	7,383	6,026	8,891
Turnagain/Northeast CI	6.5	0.2	12.0	3.5	1,794	59	3,299
Kenai/Kasilof	2.6	1.2	4.2	0.9	714	338	1,150
Southeast CI	0.0	0.0	0.0	0.1	2	0	2

Note: The 90% credibility intervals of harvest estimates may not include the point estimate for the very low harvest estimates.

Note: Stock composition and harvest estimates may not sum to 100% due to rounding errors.

Note: n is the final number of samples used in genetic analyses.

APPENDIX E: NOTHERN DISTRICT SET GILL NET STOCK COMPOSTION ESTIMATES BY DATE, 2013–2015

Appendix E1.–Northern District set gillnet fishery 2013: Temporal strata stock composition (%), including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

	(7/15–7/22; n = 398)				(7/25–8/1; n = 395)				(8/5–8/12; n = 385)				(8/15–8/22; n = 373)			
		90% CI				90% CI				90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD	Mean	5%	95%	SD	Mean	5%	95%	SD
Southwest CI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Northwest CI/Yentna	46.0	34.8	57.4	6.9	30.5	21.9	39.2	5.2	34.9	23.8	46.2	6.8	25.3	14.5	36.1	6.5
Susitna	51.0	39.7	62.1	6.8	18.7	10.0	27.9	5.5	27.4	16.6	38.3	6.6	10.3	1.5	19.3	5.2
Knik	2.7	0.2	6.3	1.9	41.3	33.4	49.4	4.9	22.0	14.0	31.5	5.4	7.9	2.1	14.2	3.7
Turnagain/Northeast CI	0.4	0.0	2.8	1.1	9.3	5.2	13.9	2.6	14.9	7.7	23.7	4.9	51.3	41.3	61.2	6.1
Kenai/Kasilof	0.0	0.0	0.0	0.1	0.2	0.0	1.1	0.4	0.8	0.2	1.6	0.5	5.3	3.0	8.0	1.5
Southeast CI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1

Note: Stock composition estimates may not sum to 100% due to rounding errors.

Note: n is the final number of samples used in genetic analyses.

Appendix E2.–Northern District set gillnet fishery 2014: Temporal strata stock composition (%), including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

	(7/14–7/21; n = 337)				(7/24–7/31; n = 394)				(8/4–8/11; n = 384)				(8/14–8/25; n = 337)			
		90% CI				90% CI				90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD	Mean	5%	95%	SD	Mean	5%	95%	SD
Southwest CI	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Northwest CI/Yentna	29.0	19.0	39.9	6.4	38.5	28.3	48.8	6.2	27.6	19.0	36.6	5.4	17.1	10.2	24.4	4.3
Susitna	34.1	23.9	44.3	6.2	11.5	2.7	21.4	5.7	17.2	8.5	26.4	5.4	2.6	0.0	9.3	3.2
Knik	34.3	27.4	41.6	4.3	37.4	28.7	46.9	5.5	36.3	28.7	44.0	4.6	12.8	6.4	19.2	3.9
Turnagain/Northeast CI	2.5	0.0	9.3	3.4	12.5	4.8	22.5	5.8	18.3	13.1	25.1	3.7	65.7	57.9	73.3	4.7
Kenai/Kasilof	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.1	0.6	0.1	1.3	0.4	1.7	0.5	3.3	0.9
Southeast CI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1

Note: Stock composition estimates may not sum to 100% due to rounding errors.

Note: n is the final number of samples used in genetic analyses.

Appendix E3.– Northern District set gillnet fishery 2015: Temporal strata stock composition (%), including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

	(7/13–7/20; n = 341)				(7/23–7/30; n = 393)				(8/3–8/10; n = 491)				(8/13–8/20; n = 484)			
		90% CI				90% CI				90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD	Mean	5%	95%	SD	Mean	5%	95%	SD
Southwest CI	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
Northwest CI/Yentna	39.1	28.9	49.4	6.2	38.3	28.7	48.4	6.0	49.0	40.1	58.0	5.4	27.8	19.4	36.4	5.2
Susitna	25.6	16.6	34.9	5.6	16.1	6.6	25.9	5.9	18.3	10.8	26.3	4.7	3.3	0.0	9.8	3.4
Knik	33.1	24.8	41.2	4.9	37.0	28.2	46.2	5.5	23.2	15.2	31.2	4.9	23.1	12.8	33.5	6.3
Turnagain/Northeast CI	2.2	0.0	8.0	2.9	8.6	0.0	18.4	6.1	8.9	3.1	18.3	5.1	43.8	33.2	54.5	6.6
Kenai/Kasilof	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.6	0.1	1.6	0.5	2.0	1.0	3.2	0.7
Southeast CI	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2

Note: Stock composition estimates may not sum to 100% due to rounding errors.

Note: n is the final number of samples used in genetic analyses.

APPENDIX F: NOTHERN DISTRICT SET GILL NET STOCK COMPOSITION AND STOCK-SPECIFIC HARVEST ESTIMATES BY AREA, 2013–2015

Appendix F1.–South portion of the General Subdistrict (Northern District) set gillnet fishery in 2013, 2014, and 2015: Stock composition (%) and stock-specific harvest estimates, including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

Year: 2013	Stock Composition (n = 393)				Harvest = 19,584		
Dates: 7/1–8/29		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	1	0	0
Northwest CI/Yentna	57.1	45.9	67.9	6.7	11,178	8,997	13,297
Susitna	38.7	28.0	49.7	6.6	7,583	5,484	9,734
Knik	4.0	1.4	7.5	1.9	789	270	1,462
Turnagain/Northeast CI	0.1	0.0	1.0	0.4	28	0	201
Kenai/Kasilof	0.0	0.0	0.1	0.1	3	0	11
Southeast CI	0.0	0.0	0.0	0.0	1	0	0

Year: 2014	Stock Composition (n = 390)				Harvest = 13,313		
Dates: 7/7–8/25		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.0	1	0	0
Northwest CI/Yentna	57.1	44.4	70.7	8.0	7,597	5,911	9,407
Susitna	42.3	28.6	55.1	8.0	5,631	3,809	7,334
Knik	0.1	0.0	0.5	0.5	14	0	61
Turnagain/Northeast CI	0.5	0.0	4.5	1.7	70	0	604
Kenai/Kasilof	0.0	0.0	0.0	0.1	1	0	0
Southeast CI	0.0	0.0	0.0	0.0	1	0	0

Year: 2015	Stock Composition (n = 393)				Harvest = 20,184		
Dates: 6/29–8/27		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	2	0	1
Northwest CI/Yentna	63.6	53.1	74.0	6.3	12,845	10,716	14,940
Susitna	28.6	18.5	39.0	6.2	5,780	3,726	7,867
Knik	6.4	2.9	10.9	2.5	1,290	590	2,202
Turnagain/Northeast CI	0.9	0.1	2.1	1.0	176	17	420
Kenai/Kasilof	0.4	0.0	1.3	0.4	88	0	258
Southeast CI	0.0	0.0	0.0	0.1	3	0	2

Note: The 90% credibility intervals of harvest estimates may not include the point estimate for the very low harvest estimates.
Note: Stock composition and harvest estimates may not sum to 100% due to rounding errors.
Note: n is the final number of samples used in genetic analyses.

Appendix F2.–North portion of the General Subdistrict (Northern District) set gillnet fishery in 2013, 2014, and 2015: Stock composition (%) and stock-specific harvest estimates, including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

Year: 2013	Stock Composition (n = 369)				Harvest = 11,049		
Dates: 7/8–8/22		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.2	3	0	3
Northwest CI/Yentna	23.8	16.2	31.9	4.8	2,628	1,789	3,520
Susitna	11.1	3.4	19.2	4.8	1,225	375	2,120
Knik	62.3	53.6	70.5	5.2	6,887	5,920	7,795
Turnagain/Northeast CI	2.8	0.0	9.7	3.4	304	0	1,067
Kenai/Kasilof	0.0	0.0	0.0	0.1	1	0	4
Southeast CI	0.0	0.0	0.0	0.1	1	0	0

Year: 2014	Stock Composition (n = 393)				Harvest = 11,059		
Dates: 7/14–8/21		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	1	0	0
Northwest CI/Yentna	8.8	2.9	15.0	3.7	975	318	1,657
Susitna	1.9	0.0	6.7	2.4	206	0	743
Knik	81.5	72.7	90.0	5.2	9,008	8,043	9,957
Turnagain/Northeast CI	7.6	0.0	16.3	5.3	844	0	1,807
Kenai/Kasilof	0.2	0.0	0.7	0.3	25	0	83
Southeast CI	0.0	0.0	0.0	0.0	0	0	0

Year: 2015	Stock Composition (n = 339)				Harvest = 10,548		
Dates: 7/6–8/24		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	1	0	0
Northwest CI/Yentna	9.7	1.7	18.0	4.8	1,018	178	1,903
Susitna	9.2	0.0	16.3	4.8	970	0	1,722
Knik	80.2	72.4	87.7	4.7	8,456	7,639	9,252
Turnagain/Northeast CI	0.9	0.0	4.1	1.6	100	0	438
Kenai/Kasilof	0.0	0.0	0.0	0.1	1	0	0
Southeast CI	0.0	0.0	0.0	0.1	2	0	2

Note: The 90% credibility intervals of harvest estimates may not include the point estimate for the very low harvest estimates.
Note: Stock composition and harvest estimates may not sum to 100% due to rounding errors.
Note: n is the final number of samples used in genetic analyses.

Appendix F3.–Eastern Subdistrict (Northern District) set gillnet fishery in 2013, 2014, and 2015: Stock composition (%) and stock-specific harvest estimates, including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

Year: 2013	Stock Composition (n = 374)				Harvest = 11,156		
Dates: 6/27–8/29		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.0	0	0	0
Northwest CI/Yentna	19.4	8.3	30.3	6.6	2,163	925	3,381
Susitna	11.7	4.5	19.7	4.7	1,303	501	2,199
Knik	4.7	1.1	9.2	2.5	528	127	1,023
Turnagain/Northeast CI	60.8	51.6	70.2	5.7	6,782	5,752	7,836
Kenai/Kasilof	3.4	0.8	6.7	1.9	379	92	744
Southeast CI	0.0	0.0	0.0	0.1	1	0	0

Year: 2014	Stock Composition (n = 392)				Harvest = 9,453		
Dates: 7/14–8/21		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	1	0	0
Northwest CI/Yentna	8.2	1.0	15.6	4.3	775	92	1,474
Susitna	9.8	4.2	15.8	3.5	925	400	1,490
Knik	6.9	1.4	15.2	4.4	656	131	1,433
Turnagain/Northeast CI	72.8	65.5	80.2	4.5	6,881	6,191	7,585
Kenai/Kasilof	2.2	0.4	4.9	1.4	210	34	463
Southeast CI	0.1	0.0	0.3	0.3	6	0	29

Year: 2015	Stock Composition (n = 392)				Harvest = 12,398		
Dates: 7/6–8/27		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.0	1	0	0
Northwest CI/Yentna	12.1	5.8	18.7	3.9	1,503	720	2,317
Susitna	1.7	0.0	5.8	2.0	209	0	721
Knik	12.7	8.0	18.3	3.1	1,580	995	2,269
Turnagain/Northeast CI	71.7	64.5	78.8	4.4	8,889	7,991	9,769
Kenai/Kasilof	1.7	0.7	3.3	0.8	215	82	405
Southeast CI	0.0	0.0	0.0	0.1	1	0	0

Note: The 90% credibility intervals of harvest estimates may not include the point estimate for the very low harvest estimates.
Note: Stock composition and harvest estimates may not sum to 100% due to rounding errors.
Note: n is the final number of samples used in genetic analyses.

APPENDIX G: UPPER SUBDISTRICT SET GILL NET STOCK COMPOSITION AND STOCK-SPECIFIC HARVEST ESTIMATES, 2015

Appendix G1.–Upper Subdistrict (Central District) set gillnet fishery, 2015: Stock composition (%) and stock-specific harvest estimates, including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

Dates: 7/20–8/10	Stock Composition (n = 400)				Harvest = 17,517		
		90% CI				90% CI	
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%
Southwest CI	0.0	0.0	0.0	0.1	3	0	2
Northwest CI/Yentna	17.1	7.8	26.6	5.7	2,987	1,358	4,658
Susitna	17.0	9.6	24.8	4.6	2,970	1,674	4,352
Knik	23.0	16.5	29.9	4.1	4,027	2,890	5,242
Turnagain/Northeast CI	13.3	8.9	18.1	2.8	2,338	1,567	3,179
Kenai/Kasilof	29.6	25.1	34.2	2.8	5,185	4,401	5,995
Southeast CI	0.0	0.0	0.2	0.2	6	0	28

Note: The 90% credibility intervals of harvest estimates may not include the point estimate for the very low harvest estimates.

Note: Stock composition and harvest estimates may not sum to 100% due to rounding errors.

Note: n is the final number of samples used in genetic analyses.