Regional Information Report 5J19-02

Genetic Stock Composition Estimates for the Upper Cook Inlet Sockeye Salmon Commercial Fishery, 2015–2018

by

Andrew W. Barclay

June 2019

Alaska Department of Fish and Game **Division of Commercial Fisheries**

Symbols and Abbreviations

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Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

REGIONAL INFORMATION REPORT 5J19-02

GENETIC STOCK IDENTIFICATION OF UPPER COOK INLET SOCKEYE SALMON HARVEST, 2015-2018

by

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INTRODUCTION

The Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries, is responsible for managing the commercial fisheries in Upper Cook Inlet (UCI) under the sustained yield principle. Application of the sustained yield principle requires an understanding of the relationship between the number of fish that spawn in a drainage (stock) and the number of their offspring that make it to reproductive adulthood (i.e., brood table). The number of offspring that return for each stock is calculated by adding the number of spawners in the drainage to the number of fish harvested before reaching the spawning grounds for each of the 5 major sockeye salmon-producing drainages in UCI: Crescent River, Susitna River, Fish Creek, Kenai River, and Kasilof River (Figure 1).

ADF&G has used genetic mixed stock analysis (MSA) to estimate stock-specific harvests of sockeye salmon (*Oncorhynchus nerka*) in the Central and Northern district commercial fisheries of UCI since 2005. The MSA sampling design has remained relatively consistent since the 2005; however, the number of samples and strata analyzed has declined over the years due to budget cuts and the redirecting of project funds to answer other fisheries questions. Regardless, the analyzed samples have represented over 90% of the catch since 2006. The spatiotemporal estimates for each fishing season were provided to area managers the spring following each season and overall estimates from 2005 to 2016 were published in Barclay (2017). However, only spatiotemporal estimates from 2005 to 2013 have been published in ADF&G reports; spatiotemporal estimates from 2014 have been submitted to ADF&G publications but have not been published yet (Barclay et al. 2010a, 2010b, 2013, 2014, 2017, *In prep*).

In May 2019, a member of the public requested unpublished MSA estimates for the 2015–2018 seasons. With the next Board of Fisheries (BOF) Upper Cook Inlet finfish meeting scheduled for February 2020, it was apparent that these estimates would need to be published in a timely manner to be available for members of the public and BOF to evaluate proposals. This report serves the purpose of making currently unpublished 2015–2018 estimates publicly available.

Upper Cook Inlet MSA reports generally contain an overview of the management strategy and the highlights of each season to help the reader interpret the patterns of stock composition in the fishery harvests. Overview of the 2015–2018 fisheries is not included in this report but can be found in detail in UCI fishery management reports. The fishery management reports for the 2015–2017 seasons can be found on the ADF&G website (Shields and Dupuis 2016, 2017; Shields and Frothingham 2018) and the 2018 has been submitted to ADF&G publications (Marston and Frothingham *In prep*).

This report includes stock composition and stock-specific harvest estimates for 2015–2018 Central District set and drift gillnet fisheries and Northern District set gillnet fishery for the following 8 reporting groups: 1) the largest producer of sockeye salmon on the west side of Cook Inlet (Crescent River; *Crescent*); 2) the remaining West Cook Inlet producers (*West*); 3) the lakes monitored by weirs in the Susitna/Yentna rivers (Judd/Chelatna/Larson lakes) with the addition of the Mama and Papa Bear Lakes and Talkeetna Sloughs population (*JCL*); 4) the remaining producers in the Susitna/Yentna rivers (*SusYen*); 5) the only major creek monitored with a weir in the Knik/Turnagain/Northeast Cook Inlet area (Fish Creek; *Fish*); 6) the remaining Knik/Turnagain/Northeast Cook Inlet producers (*KTNE*); 7) the composite of all populations within the Kenai River (*Kenai*); and 8) the composite of all populations within the Kasilof River (*Kasilof*). See Figure 1 for a map of these reporting groups.

METHODS

Methods for the 2015–2018 season MSAs generally follow those reported in the 2014 report (Barclay et al. *In prep*), except for the program used to estimate stock compositions for 2017 and 2018. For those years, a new *R*[1] package called *rubias* (Moran and Anderson 2018) was used to estimate fishery stock compositions. The *rubias* package is a Bayesian approach to the conditional genetic stock identification model based upon computationally efficient C code implemented in R. It uses cross validation and simulation to quantify and correct for biases in reporting group estimates. For each mixture analysis, a single Markov Chain Monte Carlo chain with 25,000 iterations was run. The first 5,000 iterations of the chain were discarded to remove the influence of starting values. The prior parameters for each reporting group were defined to be equal (i.e., a flat prior). Within each reporting group, the population prior parameters were divided equally among the populations within that reporting group. 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 from the single chain output.

RESULTS

TISSUE SAMPLING

Field sampling

Tissues suitable for genetic analysis were sampled from a total of 19,488 (2015), 15,894 (2016), 16,206 (2017), and 12,851 (2018) sockeye salmon from commercial catches throughout the UCI Central and Northern districts (Appendices A1–A4).

Subsampling for analysis

A total of 25 mixture samples (strata) were constructed for estimating stock compositions and stock-specific harvests of fishing area (area strata) harvests in 2015–2018 (Table 1). For 2015, 3 additional mixtures were constructed for estimating stock compositions to compare fishing periods with different restrictions (Table 2).

Drift gillnet

For the Central District Drift gillnet fishery, mixtures were constructed to represent both districtwide (excluding corridor-only) and corridor-only harvests in 2015–2017, while a single mixture was constructed to represent districtwide harvest in 2018 (Table 1; Appendices A1–A4 and B1–B4). See Figure 2 for a map of Central District drift gillnet statistical area boundaries.

Kasilof River Special Harvest Area set and drift gillnet

A single mixture was constructed to represent Kasilof River Special Harvest Area (KRSHA; Figure 3) harvests in 2018. There were no KRSHA fishing periods in 2015–2017 (Table 1; Appendices A1 and B1–B4).

Set gillnet

For the Upper Subdistrict (Central District) set gillnet fishery, 3 temporal mixtures were constructed for 2015, single mixtures were constructed for 2016 and 2017, and 4 mixtures were

[1] The R project for statistical computing, Vienna, Austria. Available from https://www.R-project.org/.

constructed for 2018 (Table 1; Appendices A1–A4 and B1–B4). The 2015–2017 mixtures represented subdistrictwide harvests. In 2018, 3 fishing periods in the Kasilof Section and 2 fishing periods in the North K-Beach statistical area of the Kenai Section were restricted to fish within 600 feet of the mean high tide mark (600 ft restriction) to reduce the harvest of Kenai River sockeye salmon. To represent both restricted and unrestricted harvests, 3 mixtures were constructed to represent 600 ft restriction periods and 1 mixture was constructed to represent unrestricted subdistrictwide harvests. To compare stock compositions for Kasilof Section set gillnet fishing periods restricted to within 1.5 mi and 600 ft of the mean high tide mark in 2015, two 1.5 mi mixtures and one 600 ft mixture were constructed (Table 2).

For the Western and Kalgin Island subdistricts (Central District) set gillnet fisheries, a single mixture was constructed for each year to represent the combined subdistricts harvest (Table 1; Appendices A1–A4 and B1–B4).

For the Eastern and General subdistricts (Northern District) set gillnet fisheries, a single mixture was constructed for each year to represent the combined subdistricts harvest (Table 1; Appendices A1–A4 and B1–B4).

See Figure 4 for a map of set gillnet subdistrict boundaries.

STOCK COMPOSITION AND STOCK-SPECIFIC HARVEST ESTIMATES

1.5 mi vs. 600 ft

The comparison of stock composition estimates from 1.5 mi and 600 ft fishing periods in the Kasilof Section in 2015 can be found in Table 3.

Individual Strata

Stock composition and stock-specific harvest estimates for individual strata (mixtures) for each fishery can be found in 5 appendices:

1) Central District drift gillnet; Appendix C
2) KRSHA; Appendix D
3) Western and Kalgin Island subdistricts (Central District) set gillnet; Appendix E
4) Upper Subdistrict (Central District) set gillnet; Appendix F
5) Eastern and General subdistricts (Northern District) set gillnet; Appendix G

Estimates by Area Strata

Annual stock-specific harvest estimates for area strata can be found in Tables 4–7 and Figures 5–8.

All strata combined

Annual UCI stock-specific harvest estimates representing all analyzed strata from 2015–2018 can be found in Table 8 and Figure 9.

ALL STRATA 2005-2018

A summary of all strata analyzed since 2005, including where the estimates were reported, can be found in Appendices H1 and H2.

ACKNOWLEDGEMENTS

Producing the 4 years of MSA estimates in this report required the efforts of a large number of dedicated people. The author acknowledges the work of the people in the ADF&G's Gene Conservation Laboratory for producing the genetic data used in the MSAs. The author would like to thank the people with Soldotna commercial fishery sampling crews who collected the thousands of samples required for producing harvest-proportional samples of fish for the MSAs.

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TABLES AND FIGURES

Table 1.–Commercial fishery strata (mixtures) for estimating stock compositions and stock-specific harvests for 2015–2018, including mixture number, the fishery and fishing area represented, sampling dates, harvest dates represented by each mixture, and number of fish genotyped and used in mixed stock analysis.

Year	Mixture No.	Fishery	Area	Dates Sampled	Dates Represented	Number of Fish	
						Genotyped	Used
2015	15-1	Central District Drift	Districtwide (excluding corridor-only periods)	6/22–8/10	6/22–8/17	435	431
	15-2		Expanded Corridor (corridor-only periods)	7/11–8/7	7/11–8/12	365	359
	15-3	Central District Set	Upper Subdistrict (all sections)	6/22–7/15	6/22–7/15	1,061[a]	298
	15-4			7/16–7/27	7/16–7/27	652[a]	298
	15-5			7/30–8/10	7/28–8/12	300	299
	15-6		Western & Kalgin Island subdistricts	6/10–8/10	6/3–8/17	400	395
	15-7	Northern District Set	Eastern & General subdistricts	7/2–8/17	6/29–8/20	400	393
2016	16-1	Central District Drift	Districtwide (excluding corridor-only periods)	6/20–8/8	6/20–8/15	400	399
	16-2		Expanded Corridor (corridor-only periods)	7/9–7/28	7/9–8/3	400	393
	16-3	Central District Set	Upper Subdistrict (all sections)	6/23–8/9	6/23–8/9	400	390
	16-4		Western & Kalgin Island subdistricts	6/15–8/11	6/13–8/15	389	388
	16-5	Northern District Set	Eastern & General subdistricts	7/4–8/11	6/30–8/18	400	387
2017	17-1	Central District Drift	Districtwide (excluding corridor-only periods)	6/19–8/14	6/19–8/21	400	386
	17-2		Expanded Corridor (corridor-only periods)	7/12–7/29	7/12–7/29	400	384
	17-3	Central District Set	Upper Subdistrict (all sections)	6/24–8/14	6/24–8/15	400	390
	17-4		Western & Kalgin Island subdistricts	6/14–8/14	6/12–8/14	400	386
	17-5	Northern District Set	Eastern & General subdistricts	7/3–8/14	6/29–8/17	400	384

-continued-

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Year	Mixture No.	Fishery	Area	Dates Sampled	Mixture Dates	Number of Fish	
						Genotyped	Used
2018	18-1	Central District Drift	Districtwide (excluding corridor-only periods)	6/21–8/7	6/21–8/13	400	393
	18-2	Central District Drift/Set	Kasilof River Special Harvest Area	8/8–8/10	8/8–8/12	400	375
	18-3	Central District Set (East Cook Inlet)	Upper Subdistrict (All sections, excluding 600 ft)[b]	6/25–7/23	6/25–7/23	400	381
	18-4		Upper Subdistrict (Kasilof Section 600 ft)[c]	7/18	7/18	190	186
	18-5		Upper Subdistrict (Kasilof Section 600 ft)[c]	7/26 & 7/28	7/26 & 7/28	190	186
	18-6		Upper Subdistrict (Kenai Section, North K-Beach 600 ft)[c]	7/19 & 7/21	7/19 & 7/21	190	187
	18-7	Central District Set (West Cook Inlet)	Western & Kalgin Island subdistricts	6/15–8/9	6/15–8/9	350	338
	18-8	Northern District Set	Eastern & General subdistricts	7/2–8/13	7/2–8/16	400	383

[a] Includes fish genotyped for comparing stock compositions of 1.5 mile and 600 foot restriction mixtures (Table 2).

[b] This mixture sample does not included fish from fisheries restricted to within 600 feet of the mean high tide mark.

[c] These mixture samples only include fish from fisheries restricted to within 600 feet of the mean high tide mark. Due to their smaller sample size, stock composition and stock-specific harvest estimates for these mixtures were reduced to 3 reporting groups.

Table 2.–Upper Subdistrict (Central District) set gillnet fishery Kasilof section for days restricted to within 1.5 miles and 600 feet of the mean high tide mark, 2015: mixture date, restriction, and number of samples selected and used in the mixed stock analysis.

		Number of Fish	
Mixture Dates	Restriction	Selected	Used
7/14	1.5 miles	400	394
7/15	600 feet	400	393
7/16	1.5 miles	400	392

Note: These mixtures were intended for comparison of stock compositions between 1.5 mile and 600 foot restriction fishing periods. Some of the fish from these mixtures are included in mixtures 15-3 and 15-4 (Table 1).

Table 3.–Upper Subdistrict (Central District) set gillnet fishery Kasilof section for days restricted to within 1.5 miles and 600 feet of the mean high tide mark, 2015: stock composition (%) estimates, including sample size (n), mean, 90% credibility interval (CI), and standard deviation (SD).

1.5 miles				
Date: 7/14	Stock Composition (*n* = 394)			
		90% CI		
Reporting Group	Mean	5%	95%	SD
Crescent	0.0	0.0	0.0	0.2
West	0.2	0.0	1.2	0.7
JCL	0.6	0.0	2.4	0.9
SusYen	0.4	0.0	1.5	0.6
Fish	1.1	0.0	3.5	1.2
KTNE	2.0	0.0	5.5	2.0
Kenai	48.7	42.9	54.7	3.6
Kasilof	47.0	40.9	52.9	3.7
600 feet				
Date: 7/15	Stock Composition (*n* = 393)			
		90% CI		
Reporting Group	Mean	5%	95%	SD
Crescent	0.0	0.0	0.0	0.2
West	0.0	0.0	0.0	0.2
JCL	0.0	0.0	0.1	0.2
SusYen	0.7	0.0	4.6	1.6
Fish	0.3	0.0	1.4	0.5
KTNE	0.4	0.0	1.4	0.5
Kenai	42.0	36.6	47.5	3.3
Kasilof	56.5	51.2	61.6	3.2
1.5 miles				
Date: 7/16	Stock Composition (*n* = 392)			
		90% CI		
Reporting Group	Mean	5%	95%	SD
Crescent	0.0	0.0	0.0	0.2
West	0.0	0.0	0.0	0.2
JCL	2.4	1.1	4.1	0.9
SusYen	6.0	2.8	9.7	2.1
Fish	1.3	0.0	2.9	0.9
KTNE	0.2	0.0	1.6	0.6
Kenai	63.5	57.4	69.5	3.7
Kasilof	26.5	21.0	32.1	3.3

Table 4.–Stock-specific harvest, 90% credibility intervals, and standard deviation (SD) calculated using a stratified estimator for combined strata in the Central District drift gillnet excluding corridor-only periods (1 temporal stratum); drift gillnet corridor-only periods (1 temporal stratum); Kasilof Special Harvest Area drift and set gillnet (1 temporal stratum); Upper Subdistrict set gillnet (3 temporal strata); Western and Kalgin Island subdistricts set gillnet (1 temporal stratum); and Northern District set gillnet (1 temporal stratum) fisheries and based on genetic analysis of mixtures of sockeye salmon harvested in the Upper Cook Inlet in 2015.

			90% CI		
Area strata	Reporting Group	Harvest	5%	95%	SD
Central District drift gillnet (excluding corridor-only periods)					
	Crescent	433	0	2,517	2,025
	West	49,023	24,357	95,064	21,298
	JCL	20,569	11,711	31,130	5,925
	SusYen	36,685	0	63,437	18,042
	Fish	377	0	2,781	1,539
	KTNE	6,207	0	15,989	5,695
	Kenai	364,433	331,286	395,998	19,675
	Kasilof	45,568	27,473	65,349	11,549
	Harvest represented	523,295			
	Harvest unanalyzed	2,230			
	Total Harvest	525,525			
Central District drift gillnet (corridor-only periods)					
	Crescent	1,980	4,512	0	12,521
	West	25,101	8,022	12,978	39,177
	JCL	784	1,907	0	5,043
	SusYen	59,551	14,547	36,870	84,485
	Fish	530	1,890	0	4,307
	KTNE	10,690	6,042	2,718	21,592
	Kenai	352,418	17,711	322,787	380,867
	Kasilof	7,717	7,795	0	22,588
	Harvest represented	458,772			
	Harvest unanalyzed	0			
	Total Harvest	458,772			

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Area strata	Reporting Group	Harvest	90% CI 5%	90% CI 95%	SD
Central District, Kasilof Special Harvest Area drift and set gillnet					
	Crescent	0	0	0	0
	West	0	0	0	0
	JCL	0	0	0	0
	SusYen	0	0	0	0
	Fish	0	0	0	0
	KTNE	0	0	0	0
	Kenai	0	0	0	0
	Kasilof	0	0	0	0
	Harvest represented	0			
	Harvest unanalyzed	130,047			
	Total Harvest	130,047			
Central District, Upper Subdistrict set gillnet					
	Crescent	369	0	1,894	1,662
	West	5,482	0	14,049	4,895
	JCL	13,065	4,052	25,401	6,644
	SusYen	47,764	23,093	77,259	16,599
	Fish	11,197	2,845	22,538	6,097
	KTNE	12,252	4,927	22,497	5,514
	Kenai	919,957	871,375	967,958	29,391
	Kasilof	369,247	326,667	411,801	25,936
	Harvest represented	1,379,333			
	Harvest unanalyzed	0			
	Total Harvest	1,379,333			
Central District, Western and Kalgin Island subdistricts set gillnet					
	Crescent	37,407	32,262	42,666	3,162
	West	37,355	32,051	42,763	3,259
	JCL	1,611	408	3,205	865
	SusYen	340	0	2,480	999
	Fish	32	0	41	198
	KTNE	185	0	1,051	604
	Kenai	16,921	12,536	21,667	2,771
	Kasilof	5,342	3,149	7,870	1,440
	Harvest represented	99,193			
	Harvest unanalyzed	578			
	Total Harvest	99,771			

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Area strata	Reporting Group	Harvest	90% CI 5%	90% CI 95%	SD
Northern District, Eastern and General subdistricts set gillnet					
	Crescent	5	0	2	43
	West	13,858	10,260	17,968	2,383
	JCL	4,963	3,208	6,773	1,080
	SusYen	15,111	11,405	18,822	2,263
	Fish	5,146	2,659	7,338	1,390
	KTNE	7,644	4,935	11,619	2,067
	Kenai	4,686	2,722	6,918	1,277
	Kasilof	13	0	15	90
	Harvest represented	51,426			
	Harvest unanalyzed	4,203			
	Total Harvest	55,629			

Table 5.–Stock-specific harvest, 90% credibility intervals, and standard deviation (SD) calculated using a stratified estimator for combined strata in the Central District drift gillnet excluding corridor-only periods (1 temporal stratum); drift gillnet corridor-only periods (1 temporal stratum); Upper Subdistrict set gillnet (3 temporal strata); Western and Kalgin Island subdistricts set gillnet (1 temporal stratum); and Northern District set gillnet (1 temporal stratum) fisheries and based on genetic analysis of mixtures of sockeye salmon harvested in the Upper Cook Inlet in 2016.

			90% CI		
Area strata	Reporting Group	Harvest	5%	95%	SD
Central District drift gillnet (excluding corridor-only periods)					
	Crescent	108	0	56	884
	West	2,320	0	15,214	6,111
	JCL	28,925	17,408	42,584	7,719
	SusYen	44,556	20,676	72,330	15,850
	Fish	13,083	4,220	24,553	6,313
	KTNE	11,441	4,029	21,809	5,593
	Kenai	627,947	594,816	657,731	19,210
	Kasilof	2,289	0	13,561	5,179
	Harvest represented	730,668			
	Harvest unanalyzed	353			
	Total Harvest	731,021			
Central District drift gillnet (corridor-only periods)					
	Crescent	35	0	11	352
	West	1,628	0	9,537	3,779
	JCL	8,796	2,405	17,251	4,591
	SusYen	16,257	1,650	35,964	10,716
	Fish	1,110	0	6,654	2,433
	KTNE	8,694	3,413	15,821	3,865
	Kenai	492,396	470,911	509,792	11,976
	Kasilof	622	0	4,911	2,213
	Harvest represented	529,538			
	Harvest unanalyzed	6,187			
	Total Harvest	535,725			

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Table 5.–Page 2 of 2.

Area strata	Reporting Group	Harvest	90% CI 5%	90% CI 95%	SD
Central District, Upper Subdistrict set gillnet					
	Crescent	718	0	3,973	3,413
	West	274	0	135	2,136
	JCL	150	0	129	1,064
	SusYen	5,587	0	45,045	16,392
	Fish	179	0	130	1,302
	KTNE	27,302	13,173	44,734	9,712
	Kenai	822,306	773,245	865,175	28,176
	Kasilof	141,336	103,986	181,296	23,504
	Harvest represented	997,853			
	Harvest unanalyzed	-			
	Total Harvest	997,853			
Central District, Western and Kalgin Island subdistricts set gillnet					
	Crescent	31,413	26,101	36,914	3,275
	West	20,733	14,313	27,696	4,120
	JCL	3,409	1,988	5,086	942
	SusYen	1,644	20	7,323	2,506
	Fish	217	0	1,376	503
	KTNE	242	0	1,856	841
	Kenai	21,658	16,659	26,856	3,097
	Kasilof	2,228	725	4,012	1,010
	Harvest represented	81,542			
	Harvest unanalyzed	3,652			
	Total Harvest	85,194			
Northern District, Eastern and General subdistricts set gillnet					
	Crescent	26	0	117	130
	West	6,890	4,300	10,291	1,860
	JCL	6,647	5,118	8,288	962
	SusYen	8,591	5,741	11,511	1,754
	Fish	6,891	5,396	8,482	940
	KTNE	5,783	4,007	8,005	1,226
	Kenai	8,817	6,484	11,235	1,447
	Kasilof	46	0	319	196
	Harvest represented	43,691			
	Harvest unanalyzed	3,301			
	Total Harvest	46,992			

Table 6.–Stock-specific harvest, 90% credibility intervals, standard deviation (SD) for the Central District drift gillnet excluding corridor-only periods, drift gillnet corridor-only periods, Upper Subdistrict set gillnet, Western and Kalgin Island subdistricts set gillnet, and Northern District set gillnet fisheries and based on genetic analysis of mixtures of sockeye salmon harvested in the Upper Cook Inlet in 2017.

			90% CI		
Area strata	Reporting Group	Harvest	5%	95%	SD
Central District drift gillnet (excluding corridor-only periods)					
	Crescent	23,281	11,289	36,712	7,864
	West	86,476	68,230	107,347	12,061
	JCL	12,351	3,587	23,247	6,110
	SusYen	51,219	32,830	72,243	12,314
	Fish	8,983	2,766	17,722	4,624
	KTNE	24,270	12,134	37,918	7,961
	Kenai	295,704	262,273	329,146	20,235
	Kasilof	72,146	49,755	95,706	13,794
	Harvest represented	574,430			
	Harvest unanalyzed	2,173			
	Total Harvest	576,603			
Central District drift gillnet (corridor-only periods)					
	Crescent	1,530	0	7,843	2,674
	West	35,486	25,245	48,040	7,043
	JCL	19,310	12,641	27,095	4,433
	SusYen	24,871	14,070	36,730	7,053
	Fish	11,043	5,949	16,925	3,395
	KTNE	5,795	967	13,415	3,864
	Kenai	170,426	153,765	186,650	9,966
	Kasilof	18,350	10,708	27,143	5,067
	Harvest represented	286,810			
	Harvest unanalyzed	16,866			
	Total Harvest	303,676			

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Table 6.–Page 2 of 2.

Area strata	Reporting Group	Harvest	90% CI 5%	90% CI 95%	SD
Central District, Upper Subdistrict set gillnet					
	Crescent	5,609	0	22,156	7,827
	West	45,256	24,673	68,190	13,244
	JCL	1,641	0	7,980	2,928
	SusYen	65,262	36,693	97,377	18,450
	Fish	30,461	16,488	47,109	9,365
	KTNE	25,232	10,475	44,229	10,473
	Kenai	418,589	371,409	467,062	29,063
	Kasilof	240,171	202,243	278,540	22,955
	Harvest represented	832,220			
	Harvest unanalyzed	-			
	Total Harvest	832,220			
Central District, Western and Kalgin Island subdistricts set gillnet					
	Crescent	24,788	21,544	28,081	2,026
	West	23,332	19,884	26,820	2,116
	JCL	670	1	1,663	523
	SusYen	1,311	52	3,205	996
	Fish	416	0	1,116	372
	KTNE	2,369	901	4,357	1,082
	Kenai	14,951	11,565	18,474	2,118
	Kasilof	1,583	0	3,388	1,052
	Harvest represented	69,420			
	Harvest unanalyzed	10,368			
	Total Harvest	79,788			
Northern District, Eastern and General subdistricts set gillnet					
	Crescent	131	0	856	315
	West	10,650	8,540	12,994	1,355
	JCL	3,517	2,237	5,016	855
	SusYen	5,984	3,736	8,414	1,403
	Fish	10,881	9,041	12,877	1,188
	KTNE	11,492	9,141	13,940	1,433
	Kenai	6,853	4,917	8,920	1,186
	Kasilof	373	0	1,368	506
	Harvest represented	49,881			
	Harvest unanalyzed	6,682			
	Total Harvest	56,563			

Table 7.–Stock-specific harvest, 90% credibility intervals, and standard deviation (SD) calculated using a stratified estimator for combined strata in the Central District drift gillnet excluding corridor-only periods (1 temporal stratum); Kasilof River Special Harvest Area drift and set gillnet (1 temporal stratum); Upper Subdistrict set gillnet (4 spatiotemporal strata); Western and Kalgin Island subdistricts set gillnet (1 temporal stratum); and Northern District set gillnet (1 temporal stratum) fisheries and based on genetic analysis of mixtures of sockeye salmon harvested in the Upper Cook Inlet in 2018.

			90% CI		
Area strata	Reporting Group	Harvest	5%	95%	SD
Central District drift gillnet (excluding corridor-only periods)					
	Crescent	1,270	0	6,997	2,963
	West	43,702	19,174	72,682	16,778
	JCL	41,966	29,697	55,217	7,714
	SusYen	29,733	11,622	53,854	12,946
	Fish	19,715	11,240	29,596	5,556
	KTNE	15,905	2,810	35,037	10,275
	Kenai	187,205	162,076	212,199	15,245
	Kasilof	57,885	41,752	74,673	9,992
	Harvest represented	397,383			
	Harvest unanalyzed	2,159			
	Total Harvest	399,542			
Kasilof River Special Harvest Area drift and set gillnet					
	Crescent	11	0	66	30
	West	1,725	1,087	2,359	387
	JCL	58	0	178	61
	SusYen	212	0	799	268
	Fish	167	0	414	142
	KTNE	340	50	821	259
	Kenai	2,493	1,890	3,166	388
	Kasilof	7,147	6,482	7,786	401
	Harvest represented	12,153			
	Harvest unanalyzed	-			
	Total Harvest	12,153			

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Table 7.–Page 2 of 2.

Area strata	Reporting Group	Harvest	90% CI 5%	90% CI 95%	SD
Central District, Upper Subdistrict set gillnet					
	Crescent	718	24	2,259	799
	West	2,543	849	5,812	1,923
	JCL	2,862	608	6,021	1,710
	SusYen	11,530	4,949	20,331	4,736
	Fish	3,476	327	8,278	2,540
	KTNE	4,265	279	11,153	3,565
	Kenai	115,871	99,068	132,684	9,984
	Kasilof	137,165	121,390	152,859	9,481
	Harvest represented	278,431			
	Harvest unanalyzed	-			
	Total Harvest	278,431			
Central District, Western and Kalgin Island subdistricts set gillnet					
	Crescent	33,945	29,437	38,089	2,622
	West	21,832	16,817	26,822	3,034
	JCL	1,766	644	3,269	820
	SusYen	407	0	2,003	851
	Fish	991	56	2,210	647
	KTNE	725	0	2,882	1,040
	Kenai	7,862	4,138	11,622	2,301
	Kasilof	1,732	0	3,797	1,181
	Harvest represented	69,260			
	Harvest unanalyzed	5,957			
	Total Harvest	75,217			
Northern District, Eastern and General subdistricts set gillnet					
	Crescent	377	0	1,824	629
	West	7,137	5,277	9,417	1,304
	JCL	5,943	4,279	7,686	1,028
	SusYen	8,676	6,346	11,199	1,500
	Fish	9,817	7,450	12,364	1,499
	KTNE	14,056	11,066	17,192	1,894
	Kenai	3,768	2,032	5,765	1,147
	Kasilof	71	0	389	160
	Harvest represented	49,845			
	Harvest unanalyzed	2,608			
	Total Harvest	52,453			

Table 8.–Stock-specific harvest, 90% credibility intervals (CI), and standard deviation (SD) calculated using a stratified estimator for combined spatial and temporal strata in all represented fishing area strata based on genetic analysis of sockeye salmon harvested in the Upper Cook Inlet commercial fishery, 2005–2018. The numbers of fish that contribute to the unrepresented strata are also provided.

			90% CI		
Year	Reporting Group	Mean	5%	95%	SD
2005	*Crescent*	14,569	64	30,065	8,876
	West	33,352	21,097	48,742	8,588
	JCL	27,178	17,361	38,890	6,600
	SusYen	27,748	15,231	43,673	8,854
	Fish	3,935	108	9,440	2,910
	KTNE	14,820	6,866	26,026	5,975
	Kenai	2,936,487	2,872,816	2,999,501	38,418
	Kasilof	1,019,935	960,699	1,079,433	36,141
	Harvest represented	4,078,024			
	Harvest unrepresented	1,157,465			
	Total harvest	5,235,489			
2006	*Crescent*	27,109	25,279	30,476	1,673
	West	53,574	45,402	62,677	5,264
	JCL	16,230	12,415	20,434	2,445
	SusYen	28,231	21,944	35,250	4,075
	Fish	333	7	1,248	503
	KTNE	17,350	12,645	22,526	3,010
	Kenai	577,512	558,050	597,296	11,902
	Kasilof	1,324,611	1,305,342	1,343,687	11,635
	Harvest represented	2,044,951			
	Harvest unrepresented	143,252			
	Total harvest	2,188,203			
2007	*Crescent*	54,001	46,973	62,559	4,772
	West	153,205	129,922	178,433	14,739
	JCL	134,100	112,161	157,216	13,723
	SusYen	104,842	74,128	137,684	19,335
	Fish	8,199	3,955	14,181	3,192
	KTNE	74,235	55,825	94,015	11,628
	Kenai	1,920,986	1,870,844	1,970,492	30,389
	Kasilof	687,091	645,072	730,015	25,806
	Harvest represented	3,136,660			
	Harvest unrepresented	177,662			
	Total harvest	3,314,322			

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Table 8.–Page 2 of 5.

Year	Reporting Group	Mean	90% CI 5%	90% CI 95%	SD
2008	*Crescent*	20,145	16,499	24,243	2,359
	West	63,717	54,582	73,860	5,880
	JCL	66,315	55,472	77,926	6,848
	SusYen	47,092	34,396	61,204	8,162
	Fish	3,516	1,471	6,181	1,490
	KTNE	47,826	39,180	57,511	5,582
	Kenai	875,430	842,868	908,403	19,876
	Kasilof	1,111,226	1,079,760	1,142,403	19,076
	Harvest represented	2,235,268			
	Harvest unrepresented	142,378			
	Total harvest	2,377,646			
2009	*Crescent*	59,630	54,305	67,836	4,182
	West	163,460	147,142	181,011	10,286
	JCL	45,224	35,567	55,619	6,127
	SusYen	57,296	42,976	72,923	9,153
	Fish	37,648	29,186	47,195	5,514
	KTNE	54,198	44,734	64,676	6,080
	Kenai	943,784	913,625	974,061	18,379
	Kasilof	670,243	645,021	695,614	15,395
	Harvest represented	2,031,483			
	Harvest unrepresented	9,797			
	Total harvest	2,041,280			
2010	*Crescent*	51,025	46,488	56,471	3,061
	West	204,880	187,225	223,412	10,994
	JCL	55,659	46,040	66,191	6,145
	SusYen	58,425	47,185	70,616	7,162
	Fish	93,905	81,844	106,611	7,564
	KTNE	78,996	67,408	91,554	7,339
	Kenai	1,821,553	1,791,885	1,850,751	17,926
	Kasilof	423,296	404,928	442,293	11,346
	Harvest represented	2,787,738			
	Harvest unrepresented	36,494			
	Total harvest	2,824,232			

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Table 8.–Page 3 of 5.

Year	Reporting Group	Mean	90% CI 5%	90% CI 95%	SD
2011	*Crescent*	63,232	58,364	70,028	3,629
	West	295,953	263,201	330,645	20,471
	JCL	92,480	72,759	114,705	12,768
	SusYen	125,039	98,621	154,410	16,997
	Fish	80,172	62,469	100,096	11,490
	KTNE	83,572	64,428	105,570	12,555
	Kenai	3,901,433	3,842,526	3,958,817	35,450
	Kasilof	470,319	437,456	505,024	20,539
	Harvest represented	5,112,200			
	Harvest unrepresented	161,399			
	Total harvest	5,273,599			
2012	*Crescent*	31,142	26,325	37,615	3,517
	West	139,175	117,443	163,628	14,072
	JCL	90,128	69,548	113,076	13,279
	SusYen	88,826	65,832	114,506	14,858
	Fish	20,029	11,630	31,003	5,997
	KTNE	42,393	29,588	58,010	8,711
	Kenai	2,513,544	2,466,204	2,559,099	28,280
	Kasilof	158,968	133,983	186,339	15,951
	Harvest represented	3,084,205			
	Harvest unrepresented	5,874			
	Total harvest	3,090,079			
2013	*Crescent*	24,942	18,225	35,382	5,454
	West	163,040	134,237	194,974	18,557
	JCL	110,754	85,767	138,712	16,135
	SusYen	76,336	55,991	99,733	13,353
	Fish	4,492	1,671	8,693	2,224
	KTNE	54,522	39,589	72,198	9,970
	Kenai	1,816,297	1,759,722	1,871,163	33,862
	Kasilof	335,839	299,715	374,057	22,589
	Harvest represented	2,586,223			
	Harvest unrepresented	21,792			
	Total harvest	2,608,015			

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Table 8.–Page 4 of 5.

Year	Reporting Group	Mean	90% CI 5%	90% CI 95%	SD
2014	*Crescent*	32,555	30,045	35,226	1,809
	West	164,220	87,101	236,147	45,058
	JCL	56,109	32,826	82,212	15,068
	SusYen	67,659	34,078	124,917	27,974
	Fish	12,424	1,813	30,557	9,728
	KTNE	53,306	25,842	115,557	27,478
	Kenai	1,406,865	1,329,437	1,483,643	46,966
	Kasilof	327,136	277,631	379,368	31,014
	Harvest represented	2,120,276			
	Harvest unrepresented	223,106			
	Total harvest	2,343,382			
2015[a]	*Crescent*	40,194	32,892	52,651	6,128
	West	130,819	100,117	178,592	23,642
	JCL	40,993	27,303	57,295	9,213
	SusYen	159,452	111,903	207,019	28,768
	Fish	17,283	7,995	29,584	6,674
	KTNE	36,978	22,335	55,201	10,192
	Kenai	1,658,415	1,593,062	1,723,022	39,466
	Kasilof	427,887	379,790	476,544	29,483
	Harvest represented	2,512,019			
	Harvest unrepresented	137,058			
	Total harvest	2,649,077			
2016[a]	*Crescent*	32,340	26,331	39,398	4,801
	West	31,875	21,660	48,746	8,773
	JCL	47,868	33,983	63,833	9,124
	SusYen	76,548	42,620	122,776	25,145
	Fish	21,454	11,679	34,050	6,947
	KTNE	53,482	35,536	74,628	11,962
	Kenai	1,973,027	1,910,874	2,029,915	36,306
	Kasilof	146,698	108,268	188,081	24,237
	Harvest represented	2,383,292			
	Harvest unrepresented	13,493			
	Total harvest	2,396,785			

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Table 8.–Page 5 of 5.

Year	Reporting Group	Mean	90% CI 5%	90% CI 95%	SD
2017	*Crescent*	55,339	38,898	76,144	11,316
	West	201,200	170,122	233,194	19,413
	JCL	37,489	25,064	51,691	8,089
	SusYen	148,646	113,353	187,813	23,061
	Fish	61,785	44,328	81,572	11,329
	KTNE	69,156	48,384	93,114	13,637
	Kenai	906,523	846,051	965,981	36,297
	Kasilof	332,623	290,424	376,533	26,991
	Harvest represented	1,812,761			
	Harvest unrepresented	36,089			
	Total harvest	1,848,850			
2018	*Crescent*	36,321	30,811	43,325	4,092
	West	76,940	51,954	105,697	16,846
	JCL	52,596	39,648	66,503	8,124
	SusYen	50,558	29,949	76,528	14,507
	Fish	34,167	24,454	45,202	6,396
	KTNE	35,292	20,341	55,310	10,963
	Kenai	317,200	288,663	346,923	18,205
	Kasilof	204,000	181,477	225,759	13,676
	Harvest represented	807,072			
	Harvest unrepresented	10,724			
	Total harvest	817,796			

[a] The estimates for 2015 and 2016 differ from what was reported in Barclay (2017) due to an error in the fish ticket database that put some districtwide harvests in the wrong stat area; therefore, those harvests were not included in the represented harvest in that report. The stock-specific harvest estimates in this report have been recalculated using the correct harvest numbers.

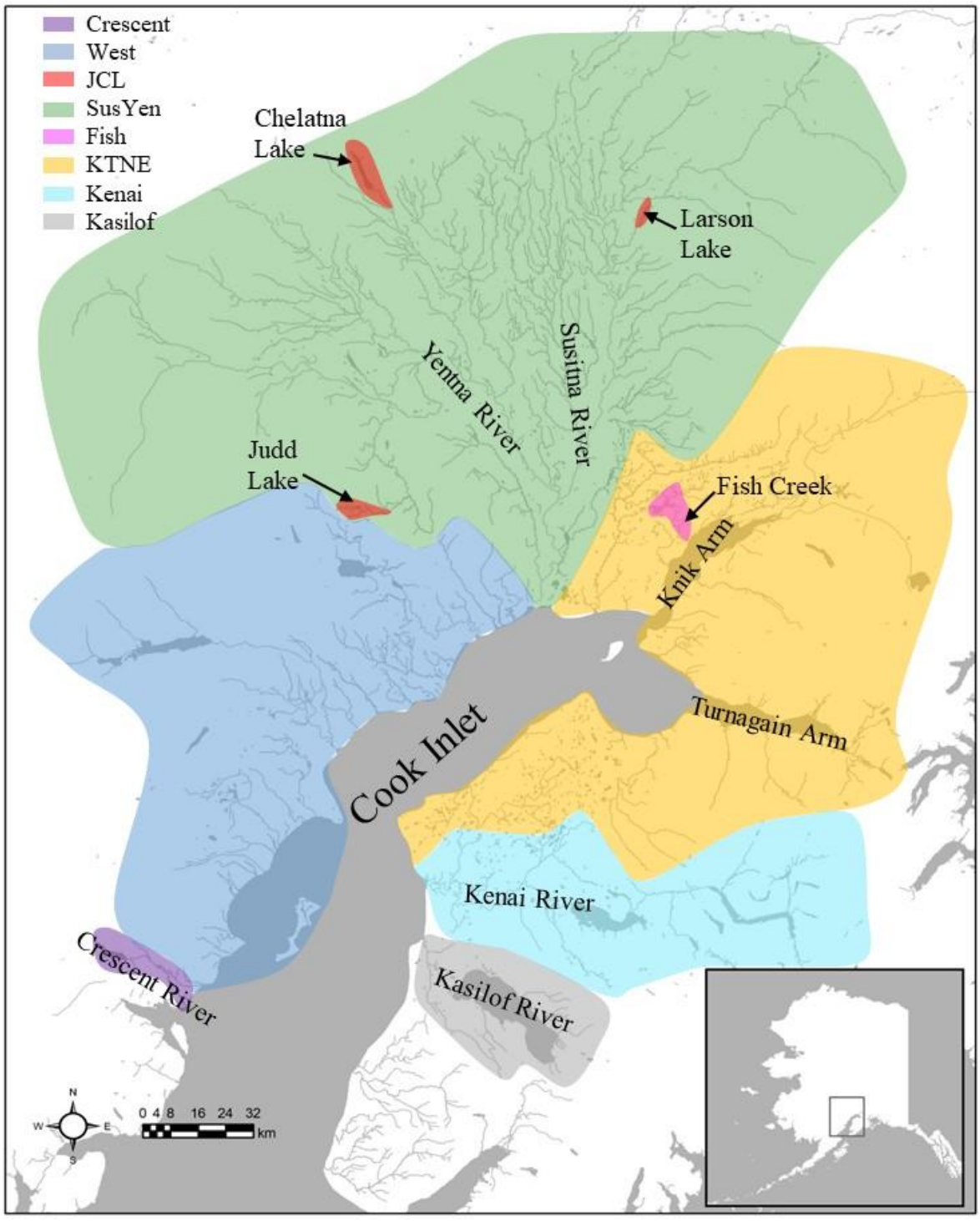

Figure 1.–Map of Cook Inlet showing reporting group areas for genetic mixed stock analysis of sockeye salmon harvest samples.

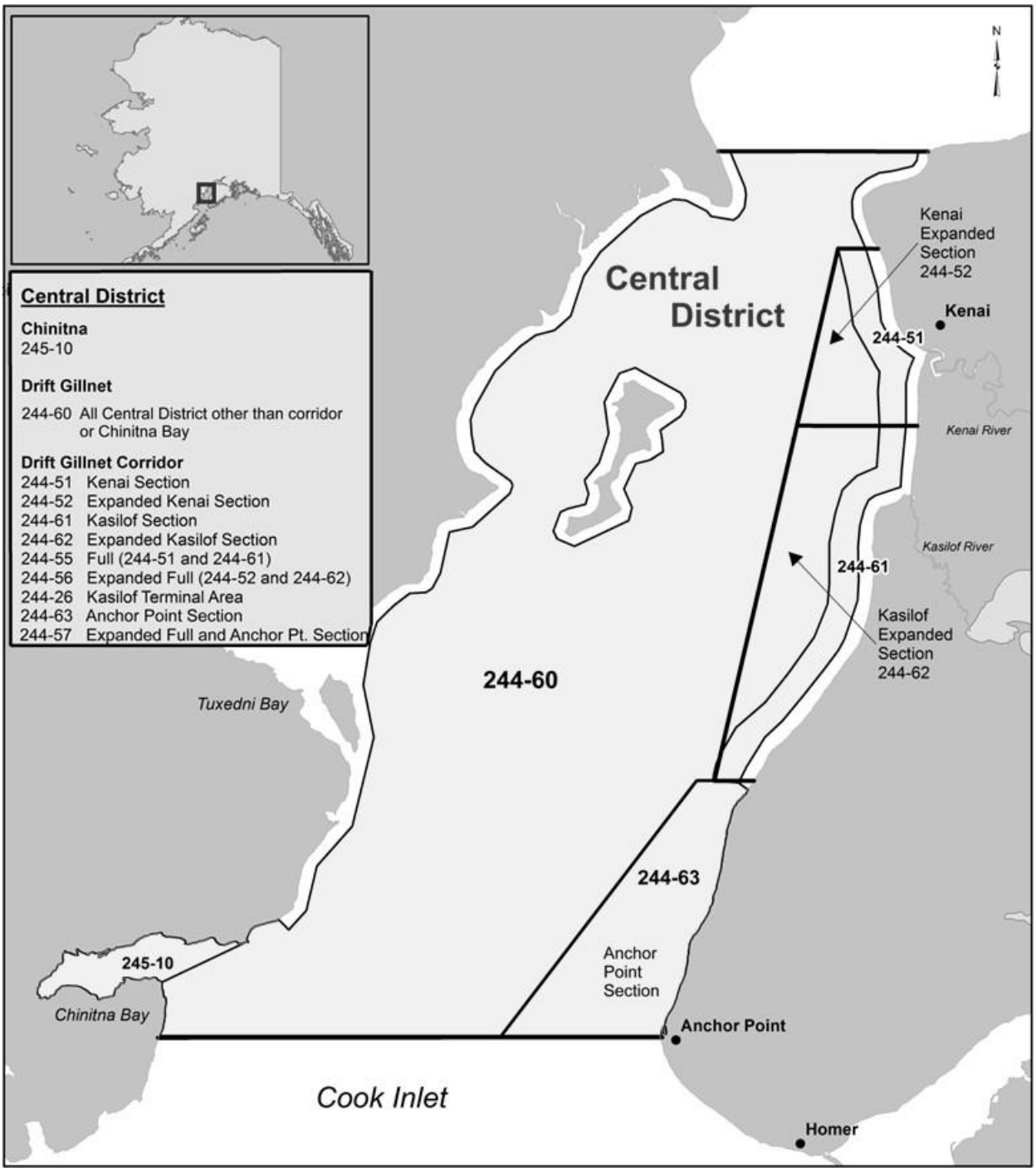

Figure 2.–Map of Upper Cook Inlet showing commercial fishing boundaries (statistical areas) within the Central district drift gillnet fishery, including the Kenai and Kasilof sections and expanded sections.

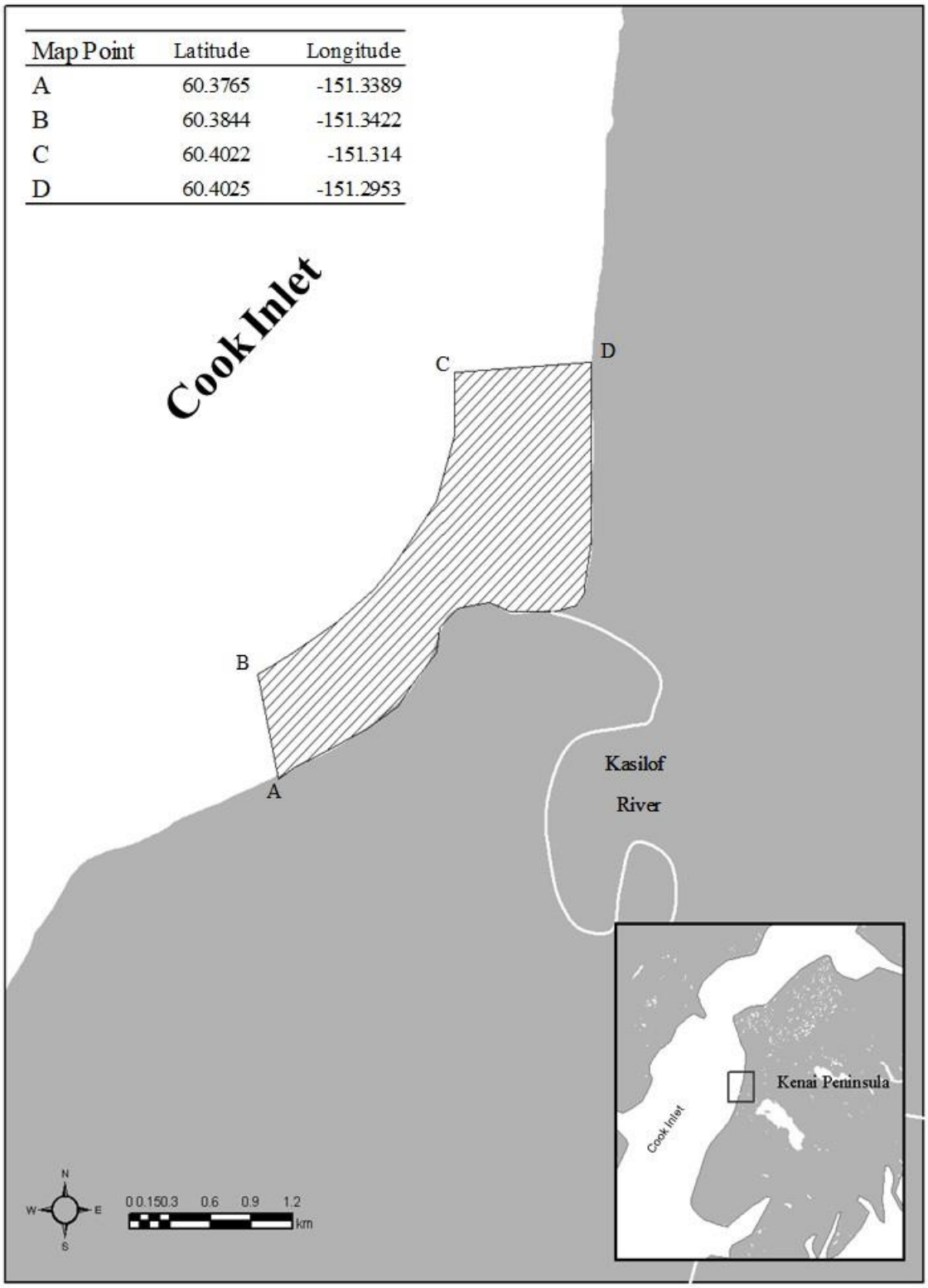

Figure 3.–Map of the mouth of the Kasilof River showing management fishing boundaries for the Kasilof River Special Harvest Area (Central District, Upper Subdistrict).

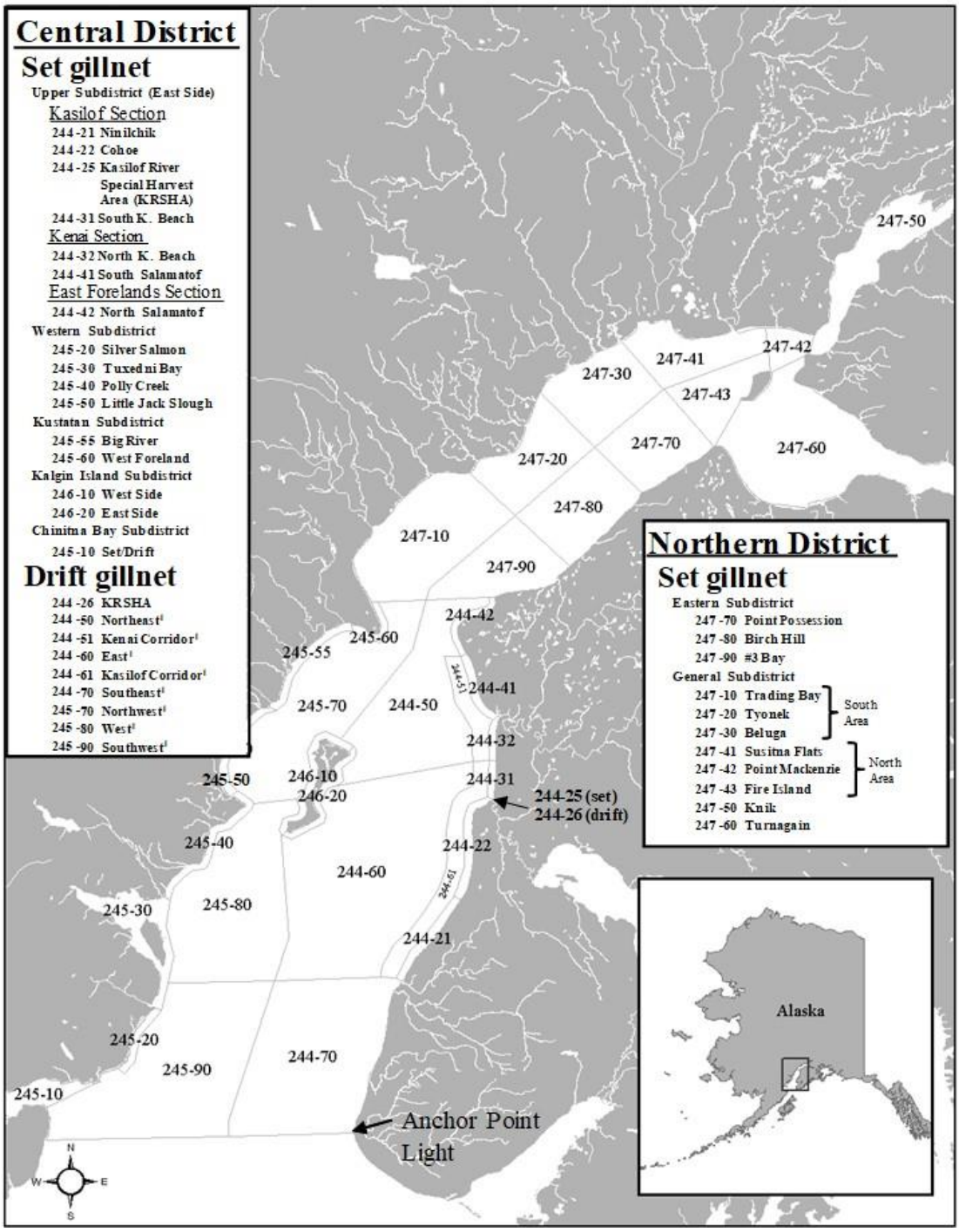

Figure 4.–Map of Upper Cook Inlet showing commercial fishing boundaries (statistical areas) for subdistricts and selected sections and subsections within the Northern and Central districts for both set and drift gillnet fisheries. See Figure 3 for a map of the Kasilof River Special Harvest Area (KRSHA).

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

[1] These stat areas are grouped into one stat area (244-60) in Figure 2 and Appendices A and B to represent all Central District drift gillnet areas excluding Chinitna Bay.

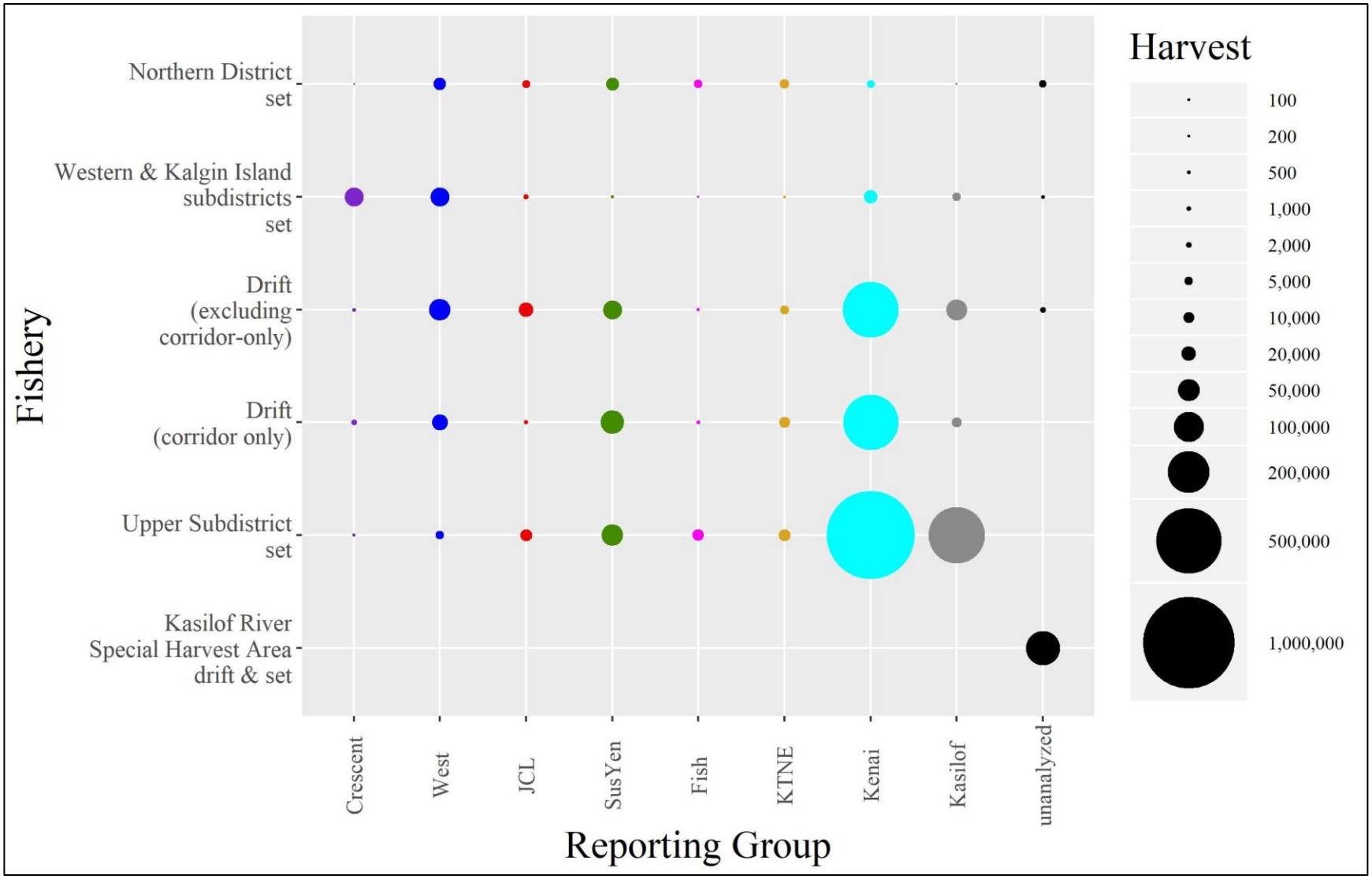

Figure 5.–Sockeye salmon harvest estimates and harvest not included in the analysis (unanalyzed) by stock (reporting group), Upper Cook Inlet commercial fishery, 2015.

Key: Black circles indicate the portion of the total harvest from each fishery not included in the analysis (unanalyzed).

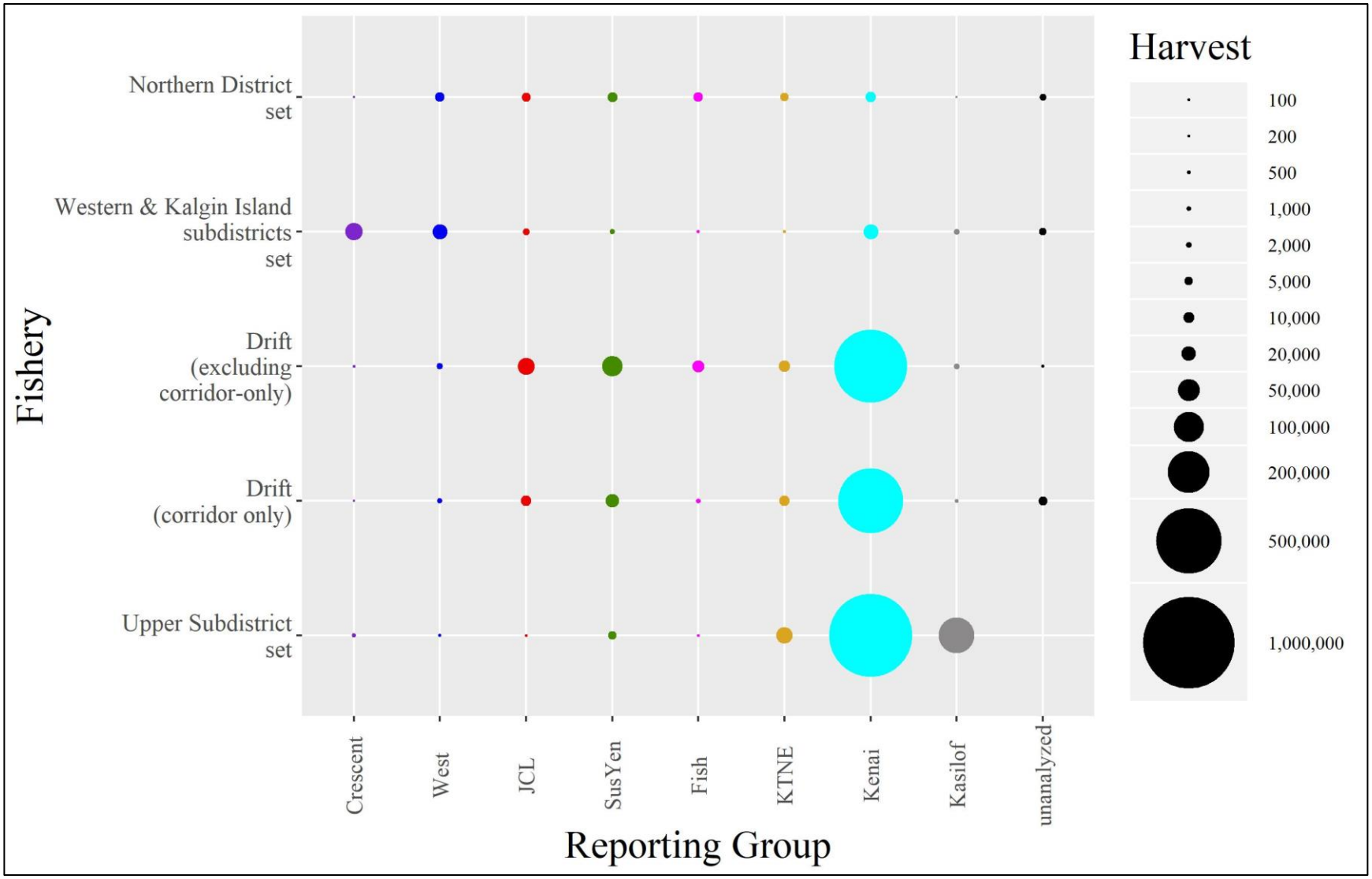

Figure 6.–Sockeye salmon harvest estimates and harvest not included in the analysis (unanalyzed) by stock (reporting group), Upper Cook Inlet commercial fishery, 2016.

Key: Black circles indicate the portion of the total harvest from each fishery not included in the analysis (unanalyzed).

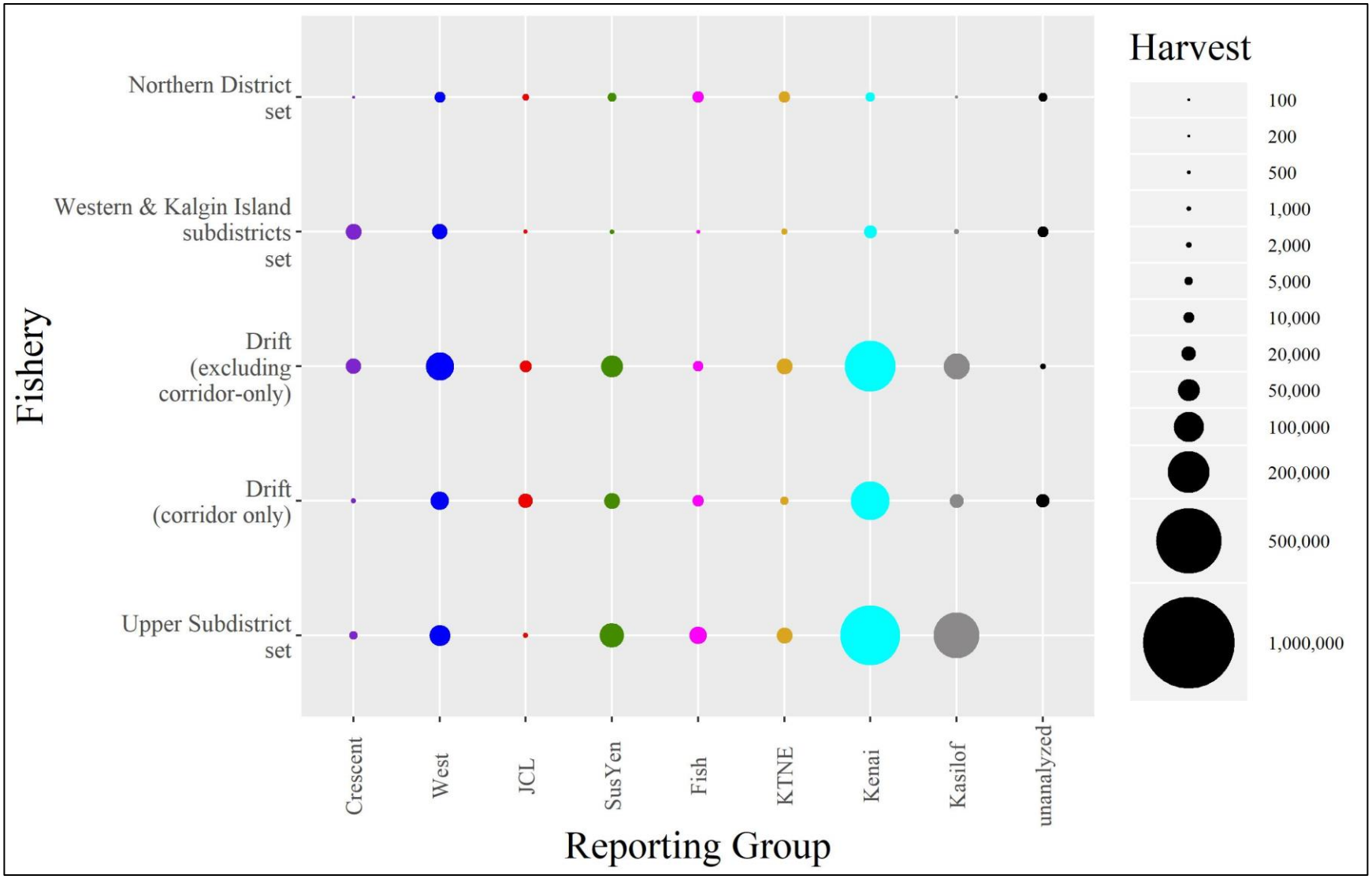

Figure 7.–Sockeye salmon harvest estimates and harvest not included in the analysis (unanalyzed) by stock (reporting group), Upper Cook Inlet commercial fishery, 2017.

Key: Black circles indicate the portion of the total harvest from each fishery not included in the analysis (unanalyzed).

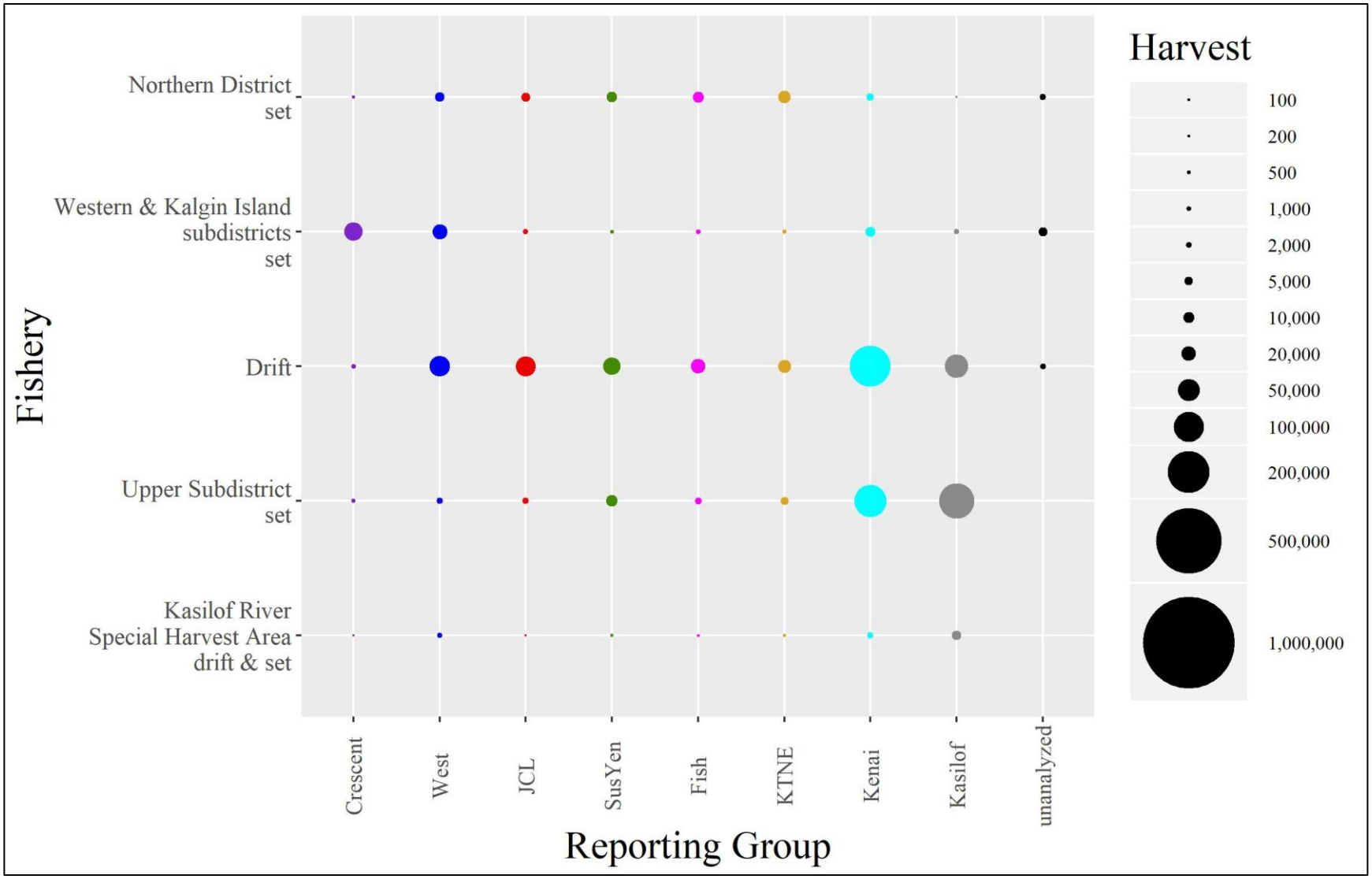

Figure 8.–Sockeye salmon harvest estimates and harvest not included in the analysis (unanalyzed) by stock (reporting group), Upper Cook Inlet commercial fishery, 2018.

Key: Black circles indicate the portion of the total harvest from each fishery not included in the analysis (unanalyzed).

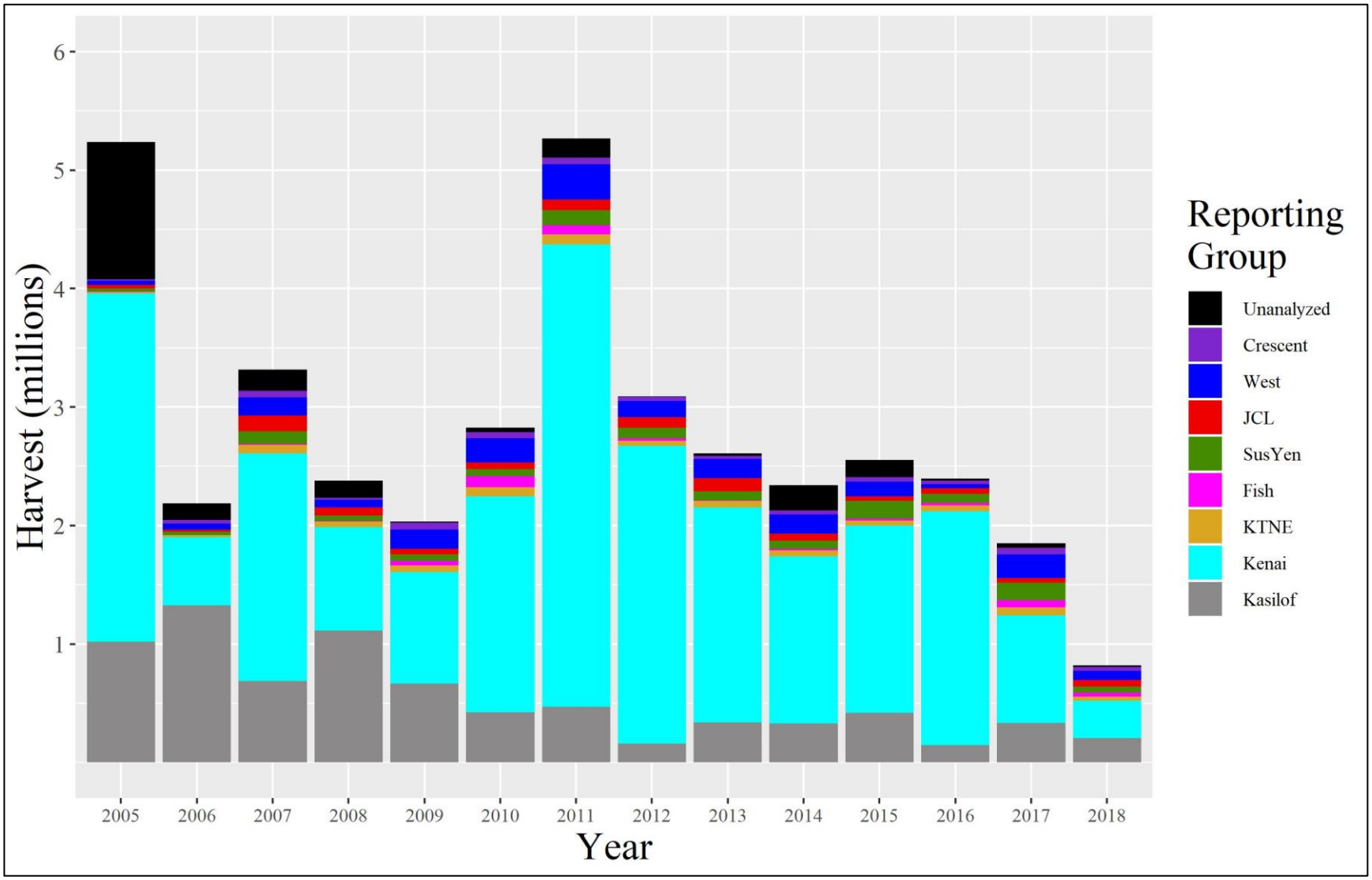

Figure 9.–Overall Cook Inlet commercial fishery stratified harvest estimates for sockeye salmon by stock for 2005–2018. Black bars indicate the portion of the total harvest from each year not included in the analysis (unanalyzed).

APPENDIX A: SAMPLE COLLECTION INFORMATION, 2015–2018

Appendix A1.–Statistical area, sampling dates, number of fish sampled and genotyped, and mixture dates and number for mixtures of sockeye salmon harvested in the Upper Cook Inlet commercial fishery in 2015. Mixture numbers correspond to mixture numbers in Table 1. Maps of statistical areas can be found on Figures 2 and 4.

		Number of Fish		Mixture	
Statistical Area(s)	Sample Date	Sampled	Genotyped	Dates	Number
Central District drift gillnet					
244-60	6/22/2015	48	2	6/22–8/17	15-1
244-60	6/25/2015	192	4	6/22–8/17	15-1
244-60	6/29/2015	384	4	6/22–8/17	15-1
244-60	7/2/2015	480	15	6/22–8/17	15-1
244-60	7/6/2015	480	18	6/22–8/17	15-1
244-60	7/9/2015	480	15	6/22–8/17	15-1
244-60	7/13/2015	480	65	6/22–8/17	15-1
244-60	7/20/2015	480	101	6/22–8/17	15-1
244-60	7/27/2015	480	91	6/22–8/17	15-1
244-60	8/3/2015	288	76	6/22–8/17	15-1
244-60	8/6/2015	288	35	6/22–8/17	15-1
244-60	8/10/2015	192	9	6/22–8/17	15-1
244-60	8/13/2015	48	-	-	-
244-56	7/11/2015	96	11	7/11–8/12	15-2
244-56	7/14/2015	96	11	7/11–8/12	15-2
244-57	7/16/2015	480	22	7/11–8/12	15-2
244-57	7/23/2015	480	90	7/11–8/12	15-2
244-57	7/25/2015	96	95	7/11–8/12	15-2
244-57	7/29/2015	96	40	7/11–8/12	15-2
244-57	7/30/2015	480	51	7/11–8/12	15-2
244-57	8/5/2015	96	40	7/11–8/12	15-2
244-57	8/7/2015	96	5	7/11–8/12	15-2
Central District, Upper Subdistrict set gillnet					
244-21 & 22	6/22/2015	240	15	6/22–7/15	15-3
244-31	6/22/2015	96	11	6/22–7/15	15-3
244-21 & 22	6/25/2015	192	30	6/22–7/15	15-3
244-31	6/25/2015	96	8	6/22–7/15	15-3
244-21 & 22	6/29/2015	192	34	6/22–7/15	15-3
244-31	6/29/2015	96	11	6/22–7/15	15-3
244-21 & 22	7/2/2015	192	33	6/22–7/15	15-3
244-31	7/2/2015	96	16	6/22–7/15	15-3
244-21 & 22	7/6/2015	192	14	6/22–7/15	15-3
244-31	7/6/2015	144	5	6/22–7/15	15-3
244-21 & 22	7/9/2015	240	41	6/22–7/15	15-3
244-31	7/9/2015	144	9	6/22–7/15	15-3
244-32	7/9/2015	96	7	6/22–7/15	15-3
244-41 & 42	7/9/2015	240	13	6/22–7/15	15-3

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Statistical Area(s)	Sample Date	Number of Fish		Mixture	
		Sampled	Genotyped	Dates	Number
Central District, Upper Subdistrict set gillnet					
244-21 & 22	7/14/2015	240	16	6/22–7/15	15-3
244-31	7/14/2015	192	6	6/22–7/15	15-3
244-32	7/14/2015	144	5	6/22–7/15	15-3
244-41 & 42	7/14/2015	240	9	6/22–7/15	15-3
244-21 & 22	7/15/2015	340	12	6/22–7/15	15-3
244-31	7/15/2015	60	5	6/22–7/15	15-3
244-21 & 22	7/16/2015	340	35	7/16–7/27	15-4
244-31	7/16/2015	192	13	7/16–7/27	15-4
244-32	7/16/2015	144	2	7/16–7/27	15-4
244-41 & 42	7/16/2015	300	6	7/16–7/27	15-4
244-21 & 22	7/20/2015	240	34	7/16–7/27	15-4
244-31	7/20/2015	192	11	7/16–7/27	15-4
244-32	7/20/2015	144	4	7/16–7/27	15-4
244-41 & 42	7/20/2015	300	10	7/16–7/27	15-4
244-21 & 22	7/23/2015	192	33	7/16–7/27	15-4
244-31	7/23/2015	192	9	7/16–7/27	15-4
244-32	7/23/2015	96	12	7/16–7/27	15-4
244-41 & 42	7/23/2015	300	38	7/16–7/27	15-4
244-21 & 22	7/27/2015	192	33	7/16–7/27	15-4
244-31	7/27/2015	144	11	7/16–7/27	15-4
244-32	7/27/2015	96	14	7/16–7/27	15-4
244-41 & 42	7/27/2015	240	36	7/16–7/27	15-4
244-21 & 22	7/30/2015	192	21	7/28–8/12	15-5
244-31	7/30/2015	144	7	7/28–8/12	15-5
244-32	7/30/2015	96	9	7/28–8/12	15-5
244-41 & 42	7/30/2015	192	39	7/28–8/12	15-5
244-21 & 22	8/3/2015	192	17	7/28–8/12	15-5
244-31	8/3/2015	144	6	7/28–8/12	15-5
244-32	8/3/2015	24	10	7/28–8/12	15-5
244-41 & 42	8/3/2015	192	42	7/28–8/12	15-5
244-21 & 22	8/6/2015	192	25	7/28–8/12	15-5
244-31	8/6/2015	96	4	7/28–8/12	15-5
244-32	8/6/2015	48	10	7/28–8/12	15-5
244-41 & 42	8/6/2015	144	64	7/28–8/12	15-5
244-21 & 22	8/10/2015	96	7	7/28–8/12	15-5
244-31	8/10/2015	48	1	7/28–8/12	15-5
244-32	8/10/2015	72	7	7/28–8/12	15-5
244-41 & 42	8/10/2015	144	31	7/28–8/12	15-5

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Statistical Area(s)	Sample Date	Number of Fish		Mixture	
		Sampled	Genotyped	Dates	Number
Central District, Western and Kalgin Island subdistricts set gillnet					
245-30 & 50	6/18/2015	48	1	6/3–8/17	15-6
245-30	6/22/2015	48	2	6/3–8/17	15-6
245-30 & 50	6/25/2015	48	3	6/3–8/17	15-6
245-30 & 50	6/29/2015	48	5	6/3–8/17	15-6
245-30, 40, & 50	7/6/2015	96	9	6/3–8/17	15-6
245-30 & 50	7/9/2015	96	8	6/3–8/17	15-6
245-30, 40, & 50	7/13/2015	96	19	6/3–8/17	15-6
245-30	7/16/2015	96	9	6/3–8/17	15-6
245-30, 40, 50, & 60	7/20/2015	96	16	6/3–8/17	15-6
245-30, 50, 60	7/23/2015	96	26	6/3–8/17	15-6
245-30, 50, 60	7/27/2015	96	23	6/3–8/17	15-6
245-30, 50, 60	7/30/2015	48	13	6/3–8/17	15-6
245-30 & 50	8/3/2015	48	6	6/3–8/17	15-6
245-30 & 50	8/6/2015	48	5	6/3–8/17	15-6
245-50	8/10/2015	67	2	6/3–8/17	15-6
246-10	6/10/2015	96	11	6/3–8/17	15-6
246-10	6/15/2015	96	7	6/3–8/17	15-6
246-10	6/22/2015	24	5	6/3–8/17	15-6
246-10 & 20	6/25/2015	48	6	6/3–8/17	15-6
246-10 & 20	7/2/2015	96	12	6/3–8/17	15-6
246-10 & 20	7/6/2015	48	17	6/3–8/17	15-6
246-10 & 20	7/9/2015	48	16	6/3–8/17	15-6
246-10 & 20	7/20/2015	288	45	6/3–8/17	15-6
246-10 & 20	8/3/2015	336	70	6/3–8/17	15-6
246-10 & 20	8/10/2015	77	64	6/3–8/17	15-6
Northern District set gillnet					
247-41, 42, & 43	7/9/2015	61	5	6/29–8/20	15-7
247-41, 42, & 43	7/16/2015	48	12	6/29–8/20	15-7
247-41, 42, & 43	7/20/2015	48	11	6/29–8/20	15-7
247-41, 42, & 43	7/23/2015	36	7	6/29–8/20	15-7
247-41, 42, & 43	7/27/2015	48	9	6/29–8/20	15-7
247-41, 42, & 43	8/3/2015	48	10	6/29–8/20	15-7
247-41, 42, & 43	8/10/2015	24	8	6/29–8/20	15-7
247-10 & 20	7/6/2015	48	26	6/29–8/20	15-7
247-10, 20, & 30	7/9/2015	48	15	6/29–8/20	15-7
247-10, 20, & 30	7/13/2015	96	19	6/29–8/20	15-7
247-10, 20, & 30	7/16/2015	72	7	6/29–8/20	15-7
247-10, 20, & 30	7/20/2015	48	19	6/29–8/20	15-7
247-10, 20, & 30	7/23/2015	48	25	6/29–8/20	15-7
247-10, 20, & 30	7/27/2015	48	18	6/29–8/20	15-7

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Statistical Area(s)	Sample Date	Number of Fish		Mixture	
		Sampled	Genotyped	Dates	Number
Northern District set gillnet					
247-10, 20, & 30	8/3/2015	62	17	6/29–8/20	15-7
247-10, 20, & 30	8/6/2015	48	11	6/29–8/20	15-7
247-10, 20, & 30	8/10/2015	72	4	6/29–8/20	15-7
247-10 & 20	8/13/2015	48	2	6/29–8/20	15-7
247-10, 20, & 30	8/17/2015	48	4	6/29–8/20	15-7
247-70, 80, & 90	7/2/2015	96	9	6/29–8/20	15-7
247-70, 80, & 90	7/6/2015	96	12	6/29–8/20	15-7
247-70, 80, & 90	7/9/2015	96	16	6/29–8/20	15-7
247-70, 80, & 90	7/13/2015	144	25	6/29–8/20	15-7
247-70, 80, & 90	7/16/2015	121	5	6/29–8/20	15-7
247-70, 80, & 90	7/20/2015	144	21	6/29–8/20	15-7
247-70, 80, & 90	7/23/2015	96	13	6/29–8/20	15-7
247-70, 80, & 90	7/27/2015	96	11	6/29–8/20	15-7
247-70, 80, & 90	7/30/2015	48	15	6/29–8/20	15-7
247-70, 80, & 90	8/3/2015	48	5	6/29–8/20	15-7
247-70, 80, & 90	8/6/2015	48	15	6/29–8/20	15-7
247-70, 80, & 90	8/10/2015	48	9	6/29–8/20	15-7
247-70, 80, & 90	8/13/2015	48	15	6/29–8/20	15-7

Appendix A2.–Statistical area, sampling dates, number of fish sampled and genotyped, and mixture dates and number for mixtures of sockeye salmon harvested in the Upper Cook Inlet commercial fishery in 2016. Mixture numbers correspond to mixture numbers in Table 1. Maps of statistical areas can be found on Figures 2 and 4.

		Number of Fish		Mixture	
Statistical Area(s)	Sample Date	Sampled	Genotyped	Dates	Number
Central District drift gillnet					
244-60	6/20/2016	48	1	6/20–8/15	16-1
244-60	6/23/2016	44	2	6/20–8/15	16-1
244-60	6/27/2016	96	6	6/20–8/15	16-1
244-60	6/30/2016	384	13	6/20–8/15	16-1
244-60	7/4/2016	480	33	6/20–8/15	16-1
244-60	7/7/2016	480	35	6/20–8/15	16-1
244-60	7/11/2016	480	65	6/20–8/15	16-1
244-60	7/14/2016	480	122	6/20–8/15	16-1
244-60	7/18/2016	480	82	6/20–8/15	16-1
244-60	7/25/2016	480	16	6/20–8/15	16-1
244-60	8/1/2016	480	17	6/20–8/15	16-1
244-60	8/4/2016	288	6	6/20–8/15	16-1
244-60	8/8/2016	192	2	6/20–8/15	16-1
244-60	8/11/2016	96	-	-	-
244-60	8/15/2016	32	-	-	-
244-56	7/9/2016	48	54	7/9–8/3	16-2
244-56	7/13/2016	96	115	7/9–8/3	16-2
244-57	7/21/2016	480	186	7/9–8/3	16-2
244-57	7/28/2016	480	45	7/9–8/3	16-2
Central District, Upper Subdistrict set gillnet					
244-21 & 22	6/23/2016	144	7	6/23–8/9	16-3
244-31	6/23/2016	7	4	6/23–8/9	16-3
244-21 & 22	6/27/2016	192	8	6/23–8/9	16-3
244-31	6/27/2016	96	3	6/23–8/9	16-3
244-21 & 22	6/30/2016	192	9	6/23–8/9	16-3
244-31	6/30/2016	96	3	6/23–8/9	16-3
244-21 & 22	7/4/2016	192	10	6/23–8/9	16-3
244-31	7/4/2016	84	4	6/23–8/9	16-3
244-21 & 22	7/7/2016	192	10	6/23–8/9	16-3
244-31	7/7/2016	144	3	6/23–8/9	16-3
244-21 & 22	7/11/2016	240	14	6/23–8/9	16-3
244-31	7/11/2016	144	5	6/23–8/9	16-3
244-21 & 22	7/14/2016	240	11	6/23–8/9	16-3
244-31	7/14/2016	192	4	6/23–8/9	16-3
244-21 & 22	7/18/2016	240	15	6/23–8/9	16-3
244-31	7/18/2016	192	3	6/23–8/9	16-3
244-21 & 22	7/21/2016	240	8	6/23–8/9	16-3
244-31	7/21/2016	192	2	6/23–8/9	16-3

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Appendix A2.–Page 2 of 3.

Statistical Area(s)	Sample Date	Number of Fish		Mixture	
		Sampled	Genotyped	Dates	Number
Central District, Upper Subdistrict set gillnet					
244-21 & 22	7/25/2016	192	7	6/23–8/9	16-3
244-31	7/25/2016	192	3	6/23–8/9	16-3
244-21 & 22	7/28/2016	185	3	6/23–8/9	16-3
244-31	7/28/2016	144	1	6/23–8/9	16-3
244-21 & 22	8/1/2016	192	5	6/23–8/9	16-3
244-31	8/1/2016	144	1	6/23–8/9	16-3
244-21 & 22	8/5/2016	192	6	6/23–8/9	16-3
244-31	8/5/2016	144	1	6/23–8/9	16-3
244-21 & 22	8/9/2016	56	4	6/23–8/9	16-3
244-31	8/9/2016	96	1	6/23–8/9	16-3
244-32	7/11/2016	96	8	6/23–8/9	16-3
244-42 & 42	7/11/2016	192	39	6/23–8/9	16-3
244-32	7/14/2016	144	5	6/23–8/9	16-3
244-42 & 42	7/14/2016	192	29	6/23–8/9	16-3
244-32	7/18/2016	144	4	6/23–8/9	16-3
244-42 & 42	7/18/2016	240	33	6/23–8/9	16-3
244-32	7/21/2016	144	4	6/23–8/9	16-3
244-42 & 42	7/21/2016	240	39	6/23–8/9	16-3
244-32	7/25/2016	96	5	6/23–8/9	16-3
244-42 & 42	7/25/2016	240	32	6/23–8/9	16-3
244-32	7/28/2016	96	1	6/23–8/9	16-3
244-42 & 42	7/28/2016	192	8	6/23–8/9	16-3
244-32	8/1/2016	96	1	6/23–8/9	16-3
244-42 & 42	8/1/2016	144	14	6/23–8/9	16-3
244-32	8/5/2016	47	3	6/23–8/9	16-3
244-42 & 42	8/5/2016	144	14	6/23–8/9	16-3
244-32	8/9/2016	48	1	6/23–8/9	16-3
244-42 & 42	8/9/2016	96	5	6/23–8/9	16-3
Central District, Western and Kalgin Island subdistricts set gillnet					
246-10	6/15/2016	96	10	6/13–8/15	16-4
246-10	6/22/2016	96	13	6/13–8/15	16-4
246-10 & 20	6/27/2016	48	12	6/13–8/15	16-4
246-10 & 20	7/4/2016	48	24	6/13–8/15	16-4
246-10 & 20	7/7/2016	24	15	6/13–8/15	16-4
246-10 & 20	7/11/2016	24	16	6/13–8/15	16-4
246-10 & 20	7/14/2016	48	22	6/13–8/15	16-4
246-10 & 20	7/25/2016	48	32	6/13–8/15	16-4
246-10 & 20	7/28/2016	132	5	6/13–8/15	16-4
246-10	8/1/2016	48	30	6/13–8/15	16-4
246-10	8/4/2016	24	13	6/13–8/15	16-4

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Statistical Area(s)	Sample Date	Number of Fish		Mixture	
		Sampled	Genotyped	Dates	Number
Central District, Western and Kalgin Island subdistricts set gillnet					
246-10	8/11/2016	24	8	6/13–8/15	16-4
245-30 & 55	6/20/2016	48	9	6/13–8/15	16-4
245-30 & 50	6/23/2016	48	6	6/13–8/15	16-4
245-30 & 50	6/27/2016	24	10	6/13–8/15	16-4
245-30 & 55	6/30/2016	24	14	6/13–8/15	16-4
245-30 & 50	7/4/2016	48	14	6/13–8/15	16-4
245-30 & 50	7/7/2016	48	20	6/13–8/15	16-4
245-30 & 50	7/11/2016	96	29	6/13–8/15	16-4
245-30, 40, & 50	7/14/2016	48	42	6/13–8/15	16-4
245-30, 40, 50, 55, 60	7/25/2016	48	38	6/13–8/15	16-4
Northern District, Eastern and General subdistricts set gillnet					
247-70 & 90	7/4/2016	96	20	6/30–8/18	16-5
247-70, 80, & 90	7/7/2016	96	14	6/30–8/18	16-5
247-70, 80, & 90	7/11/2016	96	11	6/30–8/18	16-5
247-70, 80, & 90	7/14/2016	144	11	6/30–8/18	16-5
247-70, 80, & 90	7/18/2016	144	14	6/30–8/18	16-5
247-70, 80, & 90	7/21/2016	144	14	6/30–8/18	16-5
247-70, 80, & 90	7/25/2016	48	6	6/30–8/18	16-5
247-70, 80, & 90	7/28/2016	144	15	6/30–8/18	16-5
247-70, 80, & 90	8/1/2016	48	20	6/30–8/18	16-5
247-70, 80, & 90	8/4/2016	48	13	6/30–8/18	16-5
247-70, 80, & 90	8/8/2016	48	11	6/30–8/18	16-5
247-70, 80, & 90	8/11/2016	48	11	6/30–8/18	16-5
247-10, 20, & 30	7/7/2016	48	30	6/30–8/18	16-5
247-10, 20, & 30	7/11/2016	48	45	6/30–8/18	16-5
247-10, 20, & 30	7/14/2016	78	25	6/30–8/18	16-5
247-10, 20, & 30	7/18/2016	72	26	6/30–8/18	16-5
247-10, 20, & 30	7/21/2016	48	8	6/30–8/18	16-5
247-10, 20, & 30	7/25/2016	48	11	6/30–8/18	16-5
247-10, 20, & 30	7/28/2016	144	9	6/30–8/18	16-5
247-10, 20, & 30	8/1/2016	48	10	6/30–8/18	16-5
247-10, 20, & 30	8/4/2016	48	6	6/30–8/18	16-5
247-10, 20, & 30	8/8/2016	12	2	6/30–8/18	16-5
247-10, 20, & 30	8/11/2016	78	2	6/30–8/18	16-5
247-41, 42, & 43	7/7/2016	24	3	6/30–8/18	16-5
247-41, 42, & 43	7/11/2016	24	4	6/30–8/18	16-5
247-41, 42, & 43	7/14/2016	24	17	6/30–8/18	16-5
247-41, 42, & 43	7/25/2016	19	15	6/30–8/18	16-5
247-41, 42, & 43	7/28/2016	48	9	6/30–8/18	16-5
247-41, 42, & 43	8/1/2016	48	6	6/30–8/18	16-5
247-41, 42, & 43	8/4/2016	48	12	6/30–8/18	16-5

Appendix A3.–Statistical area, sampling dates, number of fish sampled and genotyped, and mixture dates and number for mixtures of sockeye salmon harvested in the Upper Cook Inlet commercial fishery in 2017. Mixture numbers correspond to mixture numbers in Table 1. Maps of statistical areas can be found on Figures 2 and 4.

		Number of Fish		Mixture	
Statistical Area(s)	Sample Date	Sampled	Genotyped	Dates	Number
Central District drift gillnet					
244-60	6/19/2017	48	1	6/19–8/21	17-1
244-60	6/22/2017	48	3	6/19–8/21	17-1
244-60	6/26/2017	192	5	6/19–8/21	17-1
244-60	6/29/2017	330	10	6/19–8/21	17-1
244-60	7/3/2017	480	23	6/19–8/21	17-1
244-60	7/6/2017	432	52	6/19–8/21	17-1
244-60	7/10/2017	480	98	6/19–8/21	17-1
244-60	7/13/2017	480	128	6/19–8/21	17-1
244-60	7/31/2017	432	22	6/19–8/21	17-1
244-60	8/3/2017	240	23	6/19–8/21	17-1
244-60	8/7/2017	240	15	6/19–8/21	17-1
244-60	8/10/2017	192	15	6/19–8/21	17-1
244-60	8/14/2017	96	5	6/19–8/21	17-1
244-56	7/12/2017	96	55	7/12–7/29	17-2
244-56	7/15/2017	96	96	7/12–7/29	17-2
244-56	7/17/2017	480	125	7/12–7/29	17-2
244-56	7/20/2017	480	76	7/12–7/29	17-2
244-57	7/29/2017	432	48	7/12–7/29	17-2
Central District, Upper Subdistrict set gillnet					
244-21 & 22	6/24/2017	144	5	6/24–8/15	17-3
244-31	6/24/2017	72	1	6/24–8/15	17-3
244-21 & 22	6/26/2017	192	10	6/24–8/15	17-3
244-31	6/26/2017	96	3	6/24–8/15	17-3
244-21 & 22	6/29/2017	192	11	6/24–8/15	17-3
244-31	6/29/2017	96	4	6/24–8/15	17-3
244-21 & 22	7/3/2017	192	16	6/24–8/15	17-3
244-31	7/3/2017	96	4	6/24–8/15	17-3
244-21 & 22	7/6/2017	192	21	6/24–8/15	17-3
244-31	7/6/2017	144	4	6/24–8/15	17-3
244-21 & 22	7/10/2017	240	30	6/24–8/15	17-3
244-31	7/10/2017	96	3	6/24–8/15	17-3
244-32	7/10/2017	96	3	6/24–8/15	17-3
244-41	7/10/2017	192	7	6/24–8/15	17-3
244-21 & 22	7/13/2017	240	34	6/24–8/15	17-3
244-31	7/13/2017	192	1	6/24–8/15	17-3
244-32	7/13/2017	144	3	6/24–8/15	17-3
244-41	7/13/2017	192	6	6/24–8/15	17-3
244-31	7/15/2017	48	2	6/24–8/15	17-3

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Statistical Area(s)	Sample Date	Number of Fish		Mixture	
		Sampled	Genotyped	Dates	Number
Central District, Upper Subdistrict set gillnet					
244-21 & 22	7/17/2017	240	26	6/24–8/15	17-3
244-31	7/17/2017	192	8	6/24–8/15	17-3
244-32	7/17/2017	144	8	6/24–8/15	17-3
244-41	7/17/2017	240	23	6/24–8/15	17-3
244-21 & 22	7/20/2017	240	16	6/24–8/15	17-3
244-31	7/20/2017	192	4	6/24–8/15	17-3
244-32	7/20/2017	144	5	6/24–8/15	17-3
244-41	7/20/2017	240	18	6/24–8/15	17-3
244-21 & 22	7/29/2017	192	15	6/24–8/15	17-3
244-31	7/29/2017	144	2	6/24–8/15	17-3
244-32	7/29/2017	96	2	6/24–8/15	17-3
244-41	7/29/2017	192	14	6/24–8/15	17-3
244-21 & 22	7/31/2017	192	7	6/24–8/15	17-3
244-31	7/31/2017	144	2	6/24–8/15	17-3
244-32	7/31/2017	96	3	6/24–8/15	17-3
244-41	7/31/2017	144	9	6/24–8/15	17-3
244-21 & 22	8/3/2017	192	12	6/24–8/15	17-3
244-31	8/3/2017	144	3	6/24–8/15	17-3
244-32	8/3/2017	48	2	6/24–8/15	17-3
244-41	8/3/2017	144	6	6/24–8/15	17-3
244-21 & 22	8/7/2017	192	9	6/24–8/15	17-3
244-31	8/7/2017	96	3	6/24–8/15	17-3
244-32	8/7/2017	96	2	6/24–8/15	17-3
244-41	8/7/2017	192	9	6/24–8/15	17-3
244-21 & 22	8/10/2017	96	6	6/24–8/15	17-3
244-31	8/10/2017	48	2	6/24–8/15	17-3
244-32	8/10/2017	48	3	6/24–8/15	17-3
244-41	8/10/2017	144	5	6/24–8/15	17-3
244-21 & 22	8/14/2017	96	3	6/24–8/15	17-3
244-31	8/14/2017	48	1	6/24–8/15	17-3
244-32	8/14/2017	48	1	6/24–8/15	17-3
244-41	8/14/2017	96	3	6/24–8/15	17-3
Central District, Western and Kalgin Island subdistricts set gillnet					
246-10	6/14/2017	143	27	6/12–8/14	17-4
245-30, 50, & 55	6/19/2017	24	6	6/12–8/14	17-4
246-10	6/19/2017	121	12	6/12–8/14	17-4
246-10	6/21/2017	24	6	6/12–8/14	17-4
245-30	6/22/2017	24	3	6/12–8/14	17-4
245-30 & 55	6/26/2017	24	3	6/12–8/14	17-4

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Statistical Area(s)	Sample Date	Number of Fish		Mixture	
		Sampled	Genotyped	Dates	Number
Central District, Western and Kalgin Island subdistricts set gillnet					
245-30	6/29/2017	48	2	6/12–8/14	17-4
246-10	6/29/2017	48	5	6/12–8/14	17-4
246-10 & 20	7/3/2017	48	4	6/12–8/14	17-4
245-30 & 50	7/3/2017	96	9	6/12–8/14	17-4
246-10 & 20	7/6/2017	24	19	6/12–8/14	17-4
245-30 & 50	7/6/2017	48	9	6/12–8/14	17-4
245-30 & 50	7/10/2017	48	14	6/12–8/14	17-4
245-30 & 50	7/13/2017	48	15	6/12–8/14	17-4
245-30, 50, 55, & 60	7/17/2017	48	35	6/12–8/14	17-4
246-10 & 20	7/17/2017	144	27	6/12–8/14	17-4
245-30, 50, 55, & 60	7/20/2017	48	16	6/12–8/14	17-4
245-30 & 50	7/24/2017	48	6	6/12–8/14	17-4
246-10 & 20	7/24/2017	48	20	6/12–8/14	17-4
245-30, 50, & 60	7/27/2017	48	22	6/12–8/14	17-4
246-10 & 20	7/27/2017	48	13	6/12–8/14	17-4
245-30, 50, & 60	7/31/2017	24	8	6/12–8/14	17-4
246-10 & 20	7/31/2017	48	10	6/12–8/14	17-4
246-10 & 20	8/3/2017	25	22	6/12–8/14	17-4
245-30, 50, & 60	8/3/2017	48	22	6/12–8/14	17-4
246-10 & 20	8/7/2017	24	23	6/12–8/14	17-4
246-10 & 20	8/10/2017	24	24	6/12–8/14	17-4
246-10 & 20	8/14/2017	24	18	6/12–8/14	17-4
Northern District, Eastern and General subdistricts set gillnet					
247-70, 80, & 90	7/3/2017	96	21	6/29–8/17	17-5
247-70, 80, & 90	7/6/2017	96	17	6/29–8/17	17-5
247-41, 42, & 43	7/6/2017	24	2	6/29–8/17	17-5
247-10, 20, & 30	7/6/2017	48	15	6/29–8/17	17-5
247-70, 80, & 90	7/10/2017	96	18	6/29–8/17	17-5
247-41, 42, & 43	7/10/2017	24	7	6/29–8/17	17-5
247-10, 20, & 30	7/10/2017	48	18	6/29–8/17	17-5
247-70, 80, & 90	7/13/2017	144	9	6/29–8/17	17-5
247-10, 20, & 30	7/13/2017	72	11	6/29–8/17	17-5
247-70, 80, & 90	7/17/2017	144	30	6/29–8/17	17-5
247-41, 42, & 43	7/17/2017	72	15	6/29–8/17	17-5
247-10, 20, & 30	7/17/2017	72	28	6/29–8/17	17-5
247-70, 80, & 90	7/20/2017	144	27	6/29–8/17	17-5
247-41, 42, & 43	7/20/2017	48	12	6/29–8/17	17-5
247-10, 20, & 30	7/20/2017	48	12	6/29–8/17	17-5
247-41, 42, & 43	7/24/2017	40	8	6/29–8/17	17-5

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Statistical Area(s)	Sample Date	Number of Fish		Mixture	
		Sampled	Genotyped	Dates	Number
Central District, Western and Kalgin Island subdistricts set gillnet					
247-70, 80, & 90	7/27/2017	192	26	6/29–8/17	17-5
247-41, 42, & 43	7/27/2017	11	11	6/29–8/17	17-5
247-10, 20, & 30	7/27/2017	96	11	6/29–8/17	17-5
247-70, 80, & 90	7/31/2017	48	18	6/29–8/17	17-5
247-41, 42, & 43	7/31/2017	69	9	6/29–8/17	17-5
247-10, 20, & 30	7/31/2017	48	8	6/29–8/17	17-5
247-70, 80, & 90	8/3/2017	48	16	6/29–8/17	17-5
247-41, 42, & 43	8/3/2017	30	7	6/29–8/17	17-5
247-20, & 30	8/3/2017	48	4	6/29–8/17	17-5
247-70, 80, & 90	8/7/2017	48	11	6/29–8/17	17-5
247-10, 20, & 30	8/7/2017	48	1	6/29–8/17	17-5
247-70, 80, & 90	8/10/2017	48	5	6/29–8/17	17-5
247-41, 42, & 43	8/10/2017	35	3	6/29–8/17	17-5
247-10, 20, & 30	8/10/2017	18	3	6/29–8/17	17-5
247-70, 80, & 90	8/14/2017	48	15	6/29–8/17	17-5
247-41, 42, & 43	8/14/2017	48	2	6/29–8/17	17-5

Appendix A4.–Statistical area, sampling dates, number of fish sampled and genotyped, and mixture dates and number for mixtures of sockeye salmon harvested in the Upper Cook Inlet commercial fishery in 2018. Mixture numbers correspond to mixture numbers in Table 1. Maps of statistical areas can be found on Figures 2–4.

		Number of Fish		Mixture	
Statistical Area(s)	Sample Date	Sampled	Genotyped	Dates	Number
Central District drift gillnet					
244-60	6/21/2018	5	1	6/21–8/13	18-1
244-60	6/25/2018	240	5	6/21–8/13	18-1
244-60	6/28/2018	336	16	6/21–8/13	18-1
244-60	7/2/2018	336	38	6/21–8/13	18-1
244-60	7/5/2018	503	53	6/21–8/13	18-1
244-60	7/9/2018	465	79	6/21–8/13	18-1
244-60	7/12/2018	240	90	6/21–8/13	18-1
244-60	7/16/2018	480	82	6/21–8/13	18-1
244-57	7/23/2018	480	34	6/21–8/13	18-1
244-60	8/7/2018	399	2	6/21–8/13	18-1
244-60	8/23/2018	36	-	-	-
Central District, Kasilof River Special Harvest Area set and drift gillnet					
244-25	8/8/2018	96	47	8/8–8/12	18-2
244-26	8/8/2018	96	12	8/8–8/12	18-2
244-25	8/9/2018	234	234	8/8–8/12	18-2
244-26	8/9/2018	50	11	8/8–8/12	18-2
244-25	8/10/2018	95	95	8/8–8/12	18-2
244-26	8/10/2018	1	1	8/8–8/12	18-2
Central District, Upper Subdistrict set gillnet (excluding 600 ft periods)					
244-21 & 22	6/25/2018	192	16	6/25–7/28	18-3
244-31	6/25/2018	96	3	6/25–7/28	18-3
244-21 & 22	6/28/2018	192	32	6/25–7/28	18-3
244-31	6/28/2018	96	2	6/25–7/28	18-3
244-21 & 22	7/4/2018	192	25	6/25–7/28	18-3
244-31	7/4/2018	96	13	6/25–7/28	18-3
244-21 & 22	7/7/2018	192	10	6/25–7/28	18-3
244-31	7/7/2018	144	4	6/25–7/28	18-3
244-21 & 22	7/9/2018	240	13	6/25–7/28	18-3
244-31	7/9/2018	96	3	6/25–7/28	18-3
244-32	7/9/2018	84	2	6/25–7/28	18-3
244-41	7/9/2018	144	4	6/25–7/28	18-3
244-42	7/9/2018	48	2	6/25–7/28	18-3
244-21 & 22	7/12/2018	240	58	6/25–7/28	18-3
244-31	7/12/2018	240	13	6/25–7/28	18-3
244-32	7/12/2018	156	10	6/25–7/28	18-3
244-41	7/12/2018	144	32	6/25–7/28	18-3
244-42	7/12/2018	48	8	6/25–7/28	18-3
244-31	7/14/2018	96	5	6/25–7/28	18-3

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Statistical Area(s)	Sample Date	Number of Fish		Mixture	
		Sampled	Genotyped	Dates	Number
Central District, Upper Subdistrict set gillnet (excluding 600 ft periods)					
244-42	7/16/2018	48	3	6/25–7/28	18-3
244-21 & 22	7/19/2018	288	68	6/25–7/28	18-3
244-31	7/19/2018	96	23	6/25–7/28	18-3
244-21 & 22	7/23/2018	192	13	6/25–7/28	18-3
244-31	7/23/2018	140	4	6/25–7/28	18-3
244-32	7/23/2018	96	4	6/25–7/28	18-3
244-41	7/23/2018	192	24	6/25–7/28	18-3
244-42	7/23/2018	48	6	6/25–7/28	18-3
Central District, Upper Subdistrict set gillnet (600 ft periods)					
244-21 & 22	7/18/2018	240	124	7/18	18-4
244-31	7/18/2018	96	66	7/18	18-4
244-32	7/19/2018	384	145	7/19 & 7/ 21	18-5
244-32	7/21/2018	144	45	7/19 & 7/ 21	18-5
244-21 & 22	7/26/2018	192	64	7/26 & 28	18-6
244-31	7/26/2018	156	29	7/26 & 28	18-6
244-21 & 22	7/28/2018	96	76	7/26 & 28	18-6
244-31	7/28/2018	48	21	7/26 & 28	18-6
Central District, Western and Kalgin Island subdistricts set gillnet					
246-10	6/15/2018	144	6	6/15–8/9	18-7
246-10	6/18/2018	144	1	6/15–8/9	18-7
246-10 & 20	6/28/2018	15	15	6/15–8/9	18-7
246-10 & 20	7/2/2018	192	9	6/15–8/9	18-7
246-10 & 20	7/5/2018	48	11	6/15–8/9	18-7
246-10 & 20	7/9/2018	48	6	6/15–8/9	18-7
246-10 & 20	7/19/2018	144	40	6/15–8/9	18-7
246-10 & 20	7/23/2018	48	39	6/15–8/9	18-7
246-10 & 20	7/26/2018	66[a]	-	-	-
246-10 & 20	7/30/2018	48[a]	-	-	-
246-10 & 20	8/2/2018	96	21	6/15–8/9	18-7
246-10 & 20	8/9/2018	96	14	6/15–8/9	18-7
245-30	6/21/2018	96	10	6/15–8/9	18-7
245-30 & 50	6/25/2018	24	10	6/15–8/9	18-7
245-30	7/5/2018	48	32	6/15–8/9	18-7
245-30 & 50	7/9/2018	73	38	6/15–8/9	18-7
245-30	7/21/2018	48	38	6/15–8/9	18-7
245-30 & 50	7/26/2018	48	23	6/15–8/9	18-7
245-30	7/28/2018	96	6	6/15–8/9	18-7
245-30	8/4/2018	96	31	6/15–8/9	18-7

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Statistical Area(s)	Sample Date	Number of Fish		Mixture	
		Sampled	Genotyped	Dates	Number
Northern District, Eastern and General subdistricts set gillnet					
247-70, 80, & 90	7/2/2018	96	13	7/2–8/16	18-8
247-70, 80, & 90	7/5/2018	96	22	7/2–8/16	18-8
247-70, 80, & 90	7/9/2018	96	16	7/2–8/16	18-8
247-70, 80, & 90	7/12/2018	135	15	7/2–8/16	18-8
247-70, 80, & 90	7/16/2018	144	9	7/2–8/16	18-8
247-70, 80, & 90	7/19/2018	144	28	7/2–8/16	18-8
247-70, 80, & 90	7/26/2018	144	48	7/2–8/16	18-8
247-70, 80, & 90	7/30/2018	96	14	7/2–8/16	18-8
247-70, 80, & 90	8/2/2018	48	24	7/2–8/16	18-8
247-70, 80, & 90	8/6/2018	48	17	7/2–8/16	18-8
247-70, 80, & 90	8/9/2018	48	10	7/2–8/16	18-8
247-70, 80, & 90	8/13/2018	9	0	7/2–8/16	18-8
247-41, 42, & 43	7/9/2018	37	3	7/2–8/16	18-8
247-41, 42, & 43	7/12/2018	36	6	7/2–8/16	18-8
247-41, 42, & 43	7/16/2018	48	11	7/2–8/16	18-8
247-41, 42, & 43	7/19/2018	48	5	7/2–8/16	18-8
247-41, 42, & 43	7/23/2018	48	10	7/2–8/16	18-8
247-41, 42, & 43	7/26/2018	48	10	7/2–8/16	18-8
247-41, 42, & 43	7/30/2018	24	9	7/2–8/16	18-8
247-41, 42, & 43	8/2/2018	24	10	7/2–8/16	18-8
247-41, 42, & 43	8/6/2018	24	6	7/2–8/16	18-8
247-41, 42, & 43	8/9/2018	24	15	7/2–8/16	18-8
247-10, 20, & 30	7/5/2018	72	11	7/2–8/16	18-8
247-10, 20, & 30	7/9/2018	48	4	7/2–8/16	18-8
247-10, 20, & 30	7/12/2018	71	11	7/2–8/16	18-8
247-10, 20, & 30	7/16/2018	72	8	7/2–8/16	18-8
247-10, 20, & 30	7/19/2018	48	16	7/2–8/16	18-8
247-10, 20, & 30	7/23/2018	48	16	7/2–8/16	18-8
247-10, 20, & 30	7/26/2018	48	8	7/2–8/16	18-8
247-10, 20, & 30	7/30/2018	47	14	7/2–8/16	18-8
247-10, 20, & 30	8/2/2018	48	6	7/2–8/16	18-8
247-10, 20, & 30	8/6/2018	48	1	7/2–8/16	18-8
247-10, 20, & 30	8/9/2018	48	4	7/2–8/16	18-8

[a] These samples were not used in the mixed stock analysis because they may contain Northern District fish.

APPENDIX B: UPPER COOK INLET COMMERCIAL SOCKEYE SALMON HARVEST BY STATISTICAL AREA AND DATE, 2015–2018

Appendix B1.–Commercial sockeye salmon harvest by area and date in Upper Cook Inlet, 2015. Harvest numbers were pulled from fish ticket database on July 13, 2017.

Key: Represented harvest is shaded in dark gray if sampled and light gray if unsampled. The harvest represented for each genetic mixed stock analysis stratum (mixture; Table 1) is indicated with black outlines.

Central District drift gillnet

	Statistical Area			
Date	244-56	244-57	244-60	245-10
6/22/2015			2,469	
6/25/2015			4,202	
6/29/2015			8,367	
7/2/2015			17,680	
7/6/2015			20,523	
7/9/2015			17,540	
7/11/2015	14,511			
7/13/2015			75,021	
7/14/2015	15,518			
7/16/2015		26,444		
7/20/2015			123,454	
7/23/2015		104,428		
7/25/2015		70,832		
7/26/2015		58,716		
7/27/2015			46,969	
7/28/2015		20,126		
7/29/2015		31,815		
7/30/2015		34,756		
7/31/2015		26,205		
8/1/2015			59,770	
8/2/2015		10,753		
8/3/2015			72,773	
8/5/2015		38,196		
8/6/2015			43,995	
8/7/2015		3,508		
8/8/2015			17,987	
8/9/2015		833		
8/10/2015			6,229	
8/12/2015		2,131		
8/13/2015			4,951	
8/17/2015			1,365	
8/18/2015				198
8/20/2015			831	
8/21/2015				120
8/24/2015			404	

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Central District drift gillnet				
	Statistical Area			
Date	244-56	244-57	244-60	245-10
8/25/2015				119
8/28/2015				4
8/31/2015			34	
9/1/2015				31
9/3/2015			282	
9/4/2015				131
9/7/2015			50	
9/8/2015				16
9/11/2015				8
9/15/2015				1
9/17/2015			1	

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Central District, Kasilof River Special Harvest Area set and drift gillnet		
	Statistical Area	
Date	244-25	244-26
7/7/2015	6,448	579
7/8/2015	16,396	4070
7/10/2015	2,988	308
7/11/2015	2,649	
7/12/2015	1,181	109
7/13/2015	17,725	1064
7/17/2015	12,050	6763
7/18/2015	8,470	2089
7/21/2015	3,061	476
7/22/2015	6,244	5577
7/23/2015	849	
7/24/2015	11,890	6531
7/25/2015	114	
7/26/2015	127	
7/27/2015	13	
7/28/2015	2,429	93
7/29/2015	611	225
7/30/2015		208
7/31/2015	3,579	
8/1/2015	1,323	
8/2/2015	3,513	295

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Central District, Upper Subdistrict set gillnet

Date	Statistical Area 244-21	244-22	244-31	244-32	244-41	244-42
6/22/2015	6,235	3,159	8,721			
6/24/2015	4,838	3,904	4,227			
6/25/2015	10,058	2,495	2,372			
6/27/2015	19,986	4,670	7,450			
6/29/2015	13,646	6,629	8,760			
6/30/2015	17,001	4,400	4,300			
7/2/2015	14,247	5,695	11,013			
7/4/2015	9,748	8,004	9,305			
7/6/2015	10,757	7,002	6,374			
7/9/2015	18,267	8,515	4,671	4,322	6,578	2,542
7/11/2015	12,696	7,797	4,792	6,295	6,957	2,513
7/14/2015	10,659	9,289	8,001	5,458	9,104	2,341
7/15/2015	7,571	4,908	6,904			
7/16/2015	13,508	10,384	7,373	4,187	6,746	2,242
7/18/2015	20,909	21,740	16,902			
7/19/2015	13,636	6,228	7,907			
7/20/2015	15,904	13,785	4,716	8,600	17,357	2,537
7/21/2015	9,079	4,346	8,134			
7/22/2015	8,901	3,520	8,291			
7/23/2015	12,472	15,665	10,203	11,338	24,953	9,064
7/25/2015	15,770	6,226	8,463	10,345	28,515	7,677
7/26/2015	23,608	19,987	10,681	13,820	22,226	5,374
7/27/2015	11,122	6,124	7,692	13,966	30,753	7,733
7/28/2015	7,091	2,875	2,833			
7/29/2015	9,245	5,345	5,035	8,451	21,422	7,609
7/30/2015	6,867	2,819	2,498	4,852	21,486	8,256
7/31/2015	2,822	1,989	2,138			
8/1/2015	4,811	6,080	3,082	4,436	20,869	6,156
8/2/2015				5,259	11,053	4,439
8/3/2015	4,681	4,369	2,254	3,976	15,594	4,687
8/5/2015	5,463	6,743	2,546	4,891	29,852	10,272
8/6/2015	9,063	5,661	2,166	4,069	24,321	7,555
8/8/2015	5,416	4,200	1,127	5,610	15,257	5,327
8/9/2015	4,272	1,680	1,134	2,911	9,173	3,181
8/10/2015	3,332	1,495	1,264	2,500	12,092	4,698
8/12/2015				4,154	13,076	3,568

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Appendix B1.–Page 5 of 6.

Central District, West Side set gillnet

	Statistical Area							
Date	245-10	245-30	245-40	245-50	246-55	246-60	246-10	246-20
6/1/2015					226		193	
6/3/2015					292		599	
6/5/2015					302		657	
6/8/2015					103		356	
6/10/2015					379		521	
6/12/2015					133		425	
6/15/2015					251		1,102	
6/17/2015							635	
6/18/2015		261		49				
6/19/2015							114	
6/22/2015		419					435	
6/24/2015							536	
6/25/2015		577		86			421	139
6/29/2015		999		28			579	187
7/2/2015		1,433	14	52			2,426	350
7/6/2015		1,881	89	128			3,518	550
7/9/2015		1,769		90			533	326
7/13/2015		4,259	80	114			1,183	240
7/16/2015		2,015					1,211	321
7/18/2015		1,527						
7/20/2015		3,350	111	384		113	1,330	541
7/23/2015		5,938		182		402	3,869	1,151
7/25/2015		3,126						
7/27/2015		2,055		218		247	2,041	1,563
7/30/2015		1,713		165		82	3,210	1,882
8/1/2015		1,103					2,269	644
8/3/2015		1,258		132			3,595	539
8/6/2015		989		134			3,977	400
8/8/2015		229					1,219	219
8/10/2015				73			1,152	287
8/13/2015	1	118		35			1,838	913
8/15/2015							3,323	1,162
8/17/2015		115		26			4,086	991
8/20/2015		142		16				

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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
6/1/2015	5			4	2	4	118	71	44
6/8/2015	43			3	3	3	330	146	166
6/15/2015	21	7		8	3	8	140	80	99
6/22/2015	72	34		11	2	4	135	124	201
6/25/2015	77	150		2			163	80	112
6/29/2015	91	103					101	113	219
7/2/2015	108	618					392	304	605
7/6/2015	310	1,942			100		312	509	643
7/9/2015	212	1,396	162	150	92	284	1,210	485	366
7/13/2015	437	1,650	345	391	163	218	824	544	1,240
7/16/2015	62	369	284	175	396	61	511	380	52
7/20/2015	33	1,630	726	355	455	642	1,325	725	612
7/23/2015	14	2,264	972	390	303	92	709	453	492
7/27/2015	26	1,208	824	671	209	187	696	391	327
7/30/2015	56	896	296	299	277	84	479	356	437
8/3/2015	195	576	86	98	377	134	329	48	370
8/6/2015	255	1,292	203	73	166	39	454	579	866
8/10/2015	8	402	49	40	89	91	321	329	497
8/13/2015	111	115		130	96	96	329	210	757
8/17/2015	295	159	42		55	35	457	31	147
8/20/2015	5	51	31		61	16	442	439	510
8/24/2015	118	22		25	30		179	116	238
8/27/2015	6	12					49	50	97
9/3/2015							36	437	49
9/7/2015	3						100	25	96
9/10/2015							15		19
9/14/2015							2		3
9/21/2015							1		

Appendix B2.–Commercial sockeye salmon harvest by area and date in Upper Cook Inlet, 2016. Harvest numbers were pulled from fish ticket database on July 12, 2017.

Key: Represented harvest is shaded in dark gray if sampled and light gray if unsampled. The harvest represented for each genetic mixed stock analysis stratum (mixture; Table 1) is indicated with black outlines.

Central District drift gillnet

	Statistical Area			
Date	244-56	244-57	244-60	245-10
6/20/2016			1,890	
6/23/2016			3,902	
6/25/2016				
6/27/2016			10,262	
6/29/2016				
6/30/2016			20,140	
7/2/2016				
7/4/2016			61,686	
7/6/2016				
7/7/2016			63,159	
7/9/2016	71,648			
7/11/2016			118,807	
7/13/2016	63,942			
7/14/2016			101,452	
7/15/2016			122,712	
7/16/2016		69,680		
7/17/2016		21,898		
7/18/2016			149,884	
7/19/2016		49,042		
7/21/2016		111,603		
7/22/2016		40,873		
7/23/2016		38,931		
7/24/2016		13,092		
7/25/2016			30,686	
7/28/2016		26,877		
8/1/2016			29,374	
8/3/2016		21,952		
8/4/2016			11,313	
8/6/2016		5,253		
8/7/2016		694		
8/8/2016			4,543	
8/9/2016		240		
8/11/2016			664	
8/15/2016			194	
8/18/2016			122	
8/22/2016			20	
8/25/2016			26	

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Central District drift gillnet

	Statistical Area			
Date	244-56	244-57	244-60	245-10
8/26/2016				26
8/29/2016			32	
8/30/2016				44
9/1/2016			18	
9/2/2016				11
9/5/2016			26	
9/6/2016				9
9/8/2016			6	
9/9/2016				4
9/16/2016				9

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Central District, Upper Subdistrict set gillnet

Date	Statistical Area					
	244-21	244-22	244-31	244-32	244-41	244-42
6/23/2016	5,855	4,298	5,381			
6/25/2016	5,445	2,362	3,338			
6/27/2016	7,742	3,753	3,100			
6/29/2016	4,390	3,950	3,180			
6/30/2016	4,376	2,325	3,263			
7/2/2016	9,204	4,344	3,699			
7/4/2016	6,301	5,653	6,380			
7/6/2016	6,889	4,899	3,017			
7/7/2016	4,779	3,640	2,548			
7/9/2016	8,325	8,015	5,177			
7/11/2016	14,745	10,352	7,845	15,058	42,806	7,573
7/13/2016	7,358	3,767	3,808	6,020	37,234	6,873
7/14/2016	8,548	2,713	3,718	6,148	28,559	6,121
7/16/2016	8,167	5,697	4,961	8,938	29,792	6,400
7/17/2016	9,857	6,874	2,489	4,172	28,462	5,705
7/18/2016	15,443	5,819	4,554	8,016	40,582	10,223
7/19/2016	10,198	3,559	2,351	2,878	17,504	4,444
7/21/2016	2,828	3,202	3,384	6,632	62,323	12,892
7/23/2016	2,946	2,995	1,925	2,749	31,045	6,071
7/24/2016	3,201	3,399	3,004	6,889	21,447	4,265
7/25/2016	2,820	3,283	1,772	4,644	14,123	3,530
7/28/2016	3,110	4,256	1,863	3,431	16,694	3,109
8/1/2016	8,012	5,546	2,033	3,785	29,155	5,218
8/3/2016	2,715	3,714	1,644	3,774	21,275	6,235
8/5/2016	5,106	4,305	1,905	2,719	7,217	954
8/7/2016	4,418	3,028	1,265	2,439	5,818	870
8/9/2016	576	749	375	813	4,613	1,786

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Central District, West Side set gillnet

	Statistical Area							
Date	245-10	245-30	245-40	245-50	246-55	246-60	246-10	246-20
6/1/2016					314		747	
6/3/2016					411		351	
6/6/2016					193		256	
6/8/2016					345		279	
6/10/2016					299		454	
6/13/2016					492		417	
6/15/2016					640		678	
6/16/2016		491	40	175				
6/17/2016					166		327	
6/20/2016		933			223		1,344	
6/22/2016					157		824	
6/23/2016		1,001		71				
6/24/2016					250		603	
6/27/2016		1,784		166			1,144	535
6/30/2016		2,750			162		2,378	701
7/4/2016		2,502		211			1,117	409
7/7/2016		3,583		192			2,495	391
7/9/2016		4,225						
7/11/2016		3,764		379			2,356	778
7/14/2016		2,831	146	256			389	362
7/16/2016		2,008						
7/18/2016		1,959	247	505		90	2,830	685
7/21/2016		1,268	195	386	118	138	2,421	656
7/23/2016		765						
7/25/2016		514	55	83	51	119	2,054	1,013
7/28/2016		751	157	169	32	45	604	431
7/30/2016		808						
8/1/2016		1,538	295	277			3,144	2,619
8/4/2016		420	295	62			1,721	843
8/6/2016		371						
8/8/2016		64	411				1,029	296
8/11/2016	3	163	218	172			581	367
8/15/2016		9		67			448	137

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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
5/30/2016	14	1		21	1	8	518	249	88
6/6/2016	6	1			11	2	268		62
6/13/2016	20			11	21	4	457	33	112
6/20/2016	19	11		4	4	11	193	18	68
6/27/2016	30	169			2	2	138	43	220
6/30/2016	37	568	5	14			562	44	222
7/4/2016	51	1,507	21		41	15	966		480
7/7/2016	73	1,136	25	57	69	144	1,301	37	246
7/11/2016	129	1,607	285	181	107	179	647	156	444
7/14/2016	34	1,469	1,377	305	346	79	850	187	242
7/18/2016	231	1,888	945	633	316	334	712	661	314
7/21/2016	10	413	505	280	281		678	543	255
7/25/2016	93	881	522	538	495	360	353	319	29
7/28/2016	9	557	342	351	637	68	1,253	228	227
8/1/2016	107	557	493	182	292	180	1,438	222	569
8/4/2016	151	396	237	126	336	271	662	696	419
8/8/2016	47	117	21	118	176	71	527	239	509
8/11/2016	70	107	32	127	75	90	289	93	294
8/15/2016	11	13	3	9	55	58	242	168	68
8/18/2016	10	21					107	7	77
8/22/2016	6	14					97	16	44
8/25/2016	28	22					84	5	56
8/29/2016		2					5	4	23
9/1/2016	3						6	1	21
9/5/2016	1						6		4
9/8/2016	1						6		
9/12/2016							6		

Appendix B3.–Commercial sockeye salmon harvest by area and date in Upper Cook Inlet, 2017. Harvest numbers were pulled from fish ticket database on January 16, 2018.

Key: Represented harvest is shaded in dark gray if sampled and light gray if unsampled. The harvest represented for each genetic mixed stock analysis stratum (mixture; Table 1) is indicated with black outlines.

Central District drift gillnet				
	Statistical Area			
Date	244-56	244-57	244-60	245-10
6/19/2017			1,980	
6/22/2017			3,916	
6/26/2017			7,194	
6/29/2017			14,299	
7/3/2017			34,271	
7/6/2017			74,107	
7/10/2017			140,520	
7/12/2017	14,745			
7/13/2017			178,990	
7/15/2017	95,360			
7/17/2017	89,532			
7/20/2017	54,313			
7/29/2017		32,860		
7/31/2017			32,969	
8/3/2017			32,991	
8/7/2017			21,235	
8/9/2017		9,817		
8/10/2017			22,789	
8/12/2017		7,049		
8/14/2017			5,600	
8/17/2017			2,762	
8/18/2017				626
8/21/2017			807	
8/22/2017				177
8/24/2017			1,035	
8/25/2017				21
8/28/2017			25	
8/29/2017				24
8/31/2017			31	
9/1/2017				86
9/4/2017			15	
9/5/2017				49
9/7/2017			28	
9/8/2017				42
9/11/2017			3	
9/15/2017				2
9/18/2017			9	

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Central District, Upper Subdistrict set gillnet

	Statistical Area					
Date	244-21	244-22	244-31	244-32	244-41	244-42
6/24/2017	7,437	2,572	3,040			
6/26/2017	9,964	5,799	5,290			
6/28/2017	3,250	2,097	2,533			
6/29/2017	5,250	2,053	1,738			
7/1/2017	9,930	3,829	7,282			
7/3/2017	12,152	7,121	6,567			
7/5/2017	10,434	2,760	2,929			
7/6/2017	13,637	4,840	2,865			
7/8/2017	17,396	10,250	6,184			
7/10/2017	22,021	8,395	3,150	3,139	6,165	1,700
7/12/2017	23,649	8,321	2,973	2,432	4,172	949
7/13/2017	20,070	8,658	2,393	2,679	3,991	987
7/15/2017	24,599	14,298	4,406	4,397	6,947	1,314
7/17/2017	36,513	16,824	14,643	15,689	39,023	5,944
7/20/2017	20,662	12,589	8,897	9,590	30,803	5,911
7/29/2017	17,731	13,408	5,018	5,052	24,324	3,599
7/31/2017	9,100	4,977	4,188	5,721	16,151	3,169
8/3/2017	16,383	8,255	5,731	5,429	8,040	3,756
8/7/2017	5,943	5,884	3,291	4,117	13,813	4,772
8/9/2017	4,118	3,713	2,303	2,365	3,099	1,178
8/10/2017	6,369	6,499	3,253	4,270	5,148	1,792
8/14/2017	2,563	2,981	1,223	2,463	6,300	1,728
8/15/2017	1,852	1,562	1,497			

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Central District, West Side set gillnet

Date	Statistical Area						
	245-10	245-30	245-50	245-55	245-60	246-10	246-20
6/2/2017				530		976	
6/5/2017				537		791	
6/7/2017				666		1,195	
6/9/2017				613		3,039	
6/12/2017				360		1,538	
6/14/2017				265		469	
6/16/2017						775	
6/19/2017		1,022	45	269		1,301	
6/21/2017				184		783	
6/22/2017		452					
6/23/2017				75		301	
6/26/2017		455		52		479	108
6/29/2017		343				253	22
7/3/2017		1,518	26			488	212
7/6/2017		1,508	94			1,539	354
7/10/2017		2,307	215			1,604	309
7/13/2017		2,313	320			1,575	330
7/15/2017		3,323					
7/17/2017		2,795	451	125	69	2,790	819
7/20/2017		1,241	127	94	193	2,623	396
7/22/2017		1,402					
7/24/2017		879	183			709	
7/27/2017	2	1,749	456		90	2,729	1,072
7/29/2017		1,744					
7/31/2017		968	423		28	1,330	389
8/3/2017		577	377		15	960	748
8/5/2017		1,464					
8/7/2017		778	475			2,387	1,233
8/10/2017		54	419			3,327	1,178
8/14/2017		69	254			1,424	221
8/17/2017						1,447	230
8/21/2017							214
8/24/2017							128

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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
5/29/2017		3			4	15	113	63	103
6/5/2017	89	6		10	44	46	1,110	803	427
6/12/2017	138	7		12	15	57	325	268	403
6/19/2017	18	25		5	4	9	221	30	120
6/26/2017	22	139		4		1	144	106	361
6/29/2017	32	43				5	76	87	100
7/3/2017	60	670	10		38	42	813	485	1,233
7/6/2017	51	888	28	102	69	24	841	567	517
7/10/2017	105	1,876	15	137	325	389	981	552	442
7/13/2017	62	1,134	36	270	380	159	457	312	289
7/17/2017	19	2,659	656	538	237	209	1,113	955	1,459
7/20/2017	13	851	350	659	687	175	871	894	490
7/24/2017	6	82	39	89	543	248	218	58	488
7/27/2017	63	950	411	313	762	347	951	992	965
7/31/2017	23	904	38	244	537	227	528	929	472
8/3/2017		432	8	170	259	79	707	638	302
8/7/2017	6	673	14	128	303	159	600	432	221
8/10/2017	7	216	10	88	171	40	190	287	87
8/14/2017	5	107	43	5	65	165	845	251	564
8/17/2017	361	68		51	195	10	352	673	930
8/21/2017	1	1	7	5	22	17	17	118	137
8/24/2017		1			24	20	146	56	130
8/28/2017				11	9	15	180	203	47
8/31/2017					6		56	80	12
9/4/2017							5	18	5
9/7/2017							4	2	24
9/11/2017							9	6	15
9/14/2017									3

Appendix B4.–Commercial sockeye salmon harvest by area and date in Upper Cook Inlet, 2018. Harvest numbers were pulled from fish ticket database on March 8, 2019.

Key: Represented harvest is shaded in dark gray if sampled and light gray if unsampled. The harvest represented for each genetic mixed stock analysis stratum (mixture; Table 1) is indicated with black outline. The harvest represented for strata where the fishery was restricted to within 600 feet of the mean high tide mark are indicated by white numbers.

Central District drift gillnet

	Statistical Area		
Date	244-57	244-60	245-10
6/21/2018		1,208	
6/25/2018		5,008	
6/28/2018		15,457	
7/2/2018		36,524	
7/5/2018		51,993	
7/9/2018		78,474	
7/12/2018		89,824	
7/16/2018	81,812		
7/23/2018		33,959	
8/7/2018		1,656	
8/8/2018		2	
8/9/2018		1,459	
8/13/2018		7	
8/16/2018		1,129	
8/20/2018		510	
8/23/2018		213[a]	
8/27/2018		61	
8/30/2018		140	
8/31/2018			10
9/3/2018		32	
9/4/2018			25
9/6/2018		6	
9/7/2018			18
9/10/2018		8	
9/11/2018			7

-continued-

Central District, Kasilof River Special Harvest Area set and drift gillnet

Date	Statistical Area 244-25	244-26
8/8/2018	1377	373
8/9/2018	3855	286
8/10/2018	2642	13
8/11/2018	1965	70
8/12/2018	1571	1

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Central District, Upper Subdistrict set gillnet

Date	Statistical Area					
	244-21	244-22	244-31	244-32	244-41	244-42
6/25/2018	7,341	2,657	1,568			
6/28/2018	7,283	3,035	1,464			
6/30/2018	5,695	3,375	3,121			
7/4/2018	9,652	5,663	4,655			
7/7/2018	4,391	1,988	2,532			
7/9/2018	5,675	2,521	1,819	1,184	2,582	1,056
7/12/2018	10,726	14,737	7,954	6,277	19,376	4,958
7/14/2018	4,504	5,535	2,904			
7/16/2018						1,939
7/18/2018	2,654	5,380	4,394			
7/19/2018	6,905	17,663	8,504	6,885		
7/21/2018	7,585	4,711	3,037	2,172		
7/22/2018	3,490	1,636	2,588			
7/23/2018	5,469	2,367	2,240	2,595	15,018	3,713
7/26/2018	2,408	2,153	2,083			
7/28/2018	1,718	1,405	1,491			

-continued-

Central District, West Side set gillnet

	Statistical Area						
Date	245-10	245-30	245-50	245-55	245-60	246-10	246-20
6/1/2018				127		491	
6/4/2018				42		126	
6/6/2018				104		224	
6/8/2018				180		380	
6/11/2018				224		370	
6/13/2018				152		617	
6/15/2018				96		125	
6/18/2018		114		219		151	
6/20/2018				166		791	
6/21/2018		1,016					
6/22/2018						279	
6/25/2018		1,973	64			758	353
6/28/2018		2,377	15			736	155
7/2/2018		1,905	46			1,422	308
7/5/2018		2,176				1,866	371
7/7/2018		2,884					
7/9/2018		1,242	65			797	430
7/12/2018		1,437	114			799	267
7/14/2018		1,963					
7/16/2018		1,193	353			2,095	248
7/19/2018		3,015	482		357	3,993	749
7/21/2018		2,323					
7/23/2018		1,805	409		119	2,572	817
7/26/2018		1,493	321		498	3,238	1,295
7/28/2018		1,289					
7/30/2018	1	964	482		561	1,777	581
8/2/2018		1,263	302		43	1,084	703
8/4/2018		1,453					
8/6/2018	2	321	238			1,020	215
8/9/2018	3	375	173			1,088	473
8/13/2018	3						
8/16/2018			145			1,429	415
8/20/2018	4		51			12	236
8/23/2018					54		139
8/27/2018					54		75
8/30/2018							70
9/3/2018							118
9/6/2018							56
9/10/2018							12
9/13/2018							12
9/17/2018							29

-continued-

Northern District set gillnet

Date	Statistical Area								
	247-10	247-20	247-30	247-41	247-42	247-43	247-70	247-80	247-90
6/28/2018	8	42					184	99	204
7/2/2018	55	341			34	25	765	346	419
7/5/2018	104	830	18		61	31	1,582	603	419
7/9/2018	173	321	6	17	184		946	811	138
7/12/2018	96	1,171	78	137	339	284	327	791	663
7/16/2018	19	410	475	148	721	485	581	243	278
7/19/2018	467	553	890	295	216	109	1,027	984	1,374
7/23/2018	275	488	1,163	401	466	331	956	1,080	687
7/26/2018	479	295	231	196	828	220	983	970	1,051
7/30/2018	435	591	635	262	552	318	664	545	502
8/2/2018	284	183	258	255	633	281	943	1,096	896
8/6/2018	16	94		8	597	143	612	677	765
8/9/2018	112	195	124	343	1,022	279	353	433	393
8/13/2018		5		6	190			10	9
8/16/2018	242	170			144	230	187	251	412
8/20/2018	180	45			37	32	213	115	168
8/23/2018	11	63		6	3		146	171	161
8/27/2018	6						175	101	224
8/30/2018	6	2			2		27	39	56
9/3/2018	4						14	16	28
9/6/2018							3	8	9

[a] Samples were collected but not included in the mixed-stock analysis.

APPENDIX C: CENTRAL DISTRICT DRIFT GILLNET STOCK COMPOSTION AND STOCK-SPECIFIC HARVEST BY DATE, 2015–2018

Appendix C1.–Central District drift gillnet fishery, 2015: Temporal stratum stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Excluding corridor-only periods								
Dates: 6/22–8/17	Stock Composition (*n* = 431)				Harvest = 521,527			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.1	0.0	0.5	0.4	432	0	2,509	2,018
West	9.4	4.7	18.2	4.1	48,857	24,275	94,743	21,226
JCL	3.9	2.2	5.9	1.1	20,499	11,672	31,025	5,905
SusYen	7.0	0.0	12.1	3.4	36,561	0	63,223	17,982
Fish	0.1	0.0	0.5	0.3	376	0	2,772	1,534
KTNE	1.2	0.0	3.1	1.1	6,186	0	15,935	5,676
Kenai	69.6	63.3	75.7	3.8	363,202	330,167	394,660	19,609
Kasilof	8.7	5.2	12.5	2.2	45,414	27,380	65,128	11,510
Corridor-only periods								
Dates: 7/11–8/12	Stock Composition (*n* = 359)				Harvest = 458,772			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.4	0.0	2.7	1.0	1,980	0	12,550	4,526
West	5.5	2.8	8.5	1.8	25,101	12,966	39,219	8,035
JCL	0.2	0.0	1.1	0.4	784	0	5,079	1,911
SusYen	13.0	8.0	18.4	3.2	59,551	36,729	84,501	14,578
Fish	0.1	0.0	1.0	0.4	530	0	4,415	1,915
KTNE	2.3	0.6	4.7	1.3	10,690	2,672	21,629	6,064
Kenai	76.8	70.3	83.0	3.9	352,418	322,724	380,810	17,716
Kasilof	1.7	0.0	4.9	1.7	7,717	0	22,661	7,810

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.

Appendix C2.–Central District drift gillnet fishery, 2016: Temporal stratum stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Excluding corridor-only periods								
Dates: 6/20–8/15	Stock Composition (*n* = 399)				Harvest = 727,643			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.0	0.0	0.0	0.1	108	0	56	880
West	0.3	0.0	2.1	0.8	2,310	0	15,151	6,085
JCL	4.0	2.4	5.8	1.1	28,805	17,336	42,408	7,687
SusYen	6.1	2.8	9.9	2.2	44,372	20,590	72,030	15,785
Fish	1.8	0.6	3.4	0.9	13,028	4,203	24,452	6,287
KTNE	1.6	0.6	3.0	0.8	11,393	4,012	21,719	5,570
Kenai	85.9	81.4	90.0	2.6	625,347	592,353	655,008	19,131
Kasilof	0.3	0.0	1.9	0.7	2,280	0	13,505	5,158
Corridor-only periods								
Dates: 7/9–8/3	Stock Composition (*n* = 393)				Harvest = 529,538			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.0	0.0	0.0	0.1	35	0	11	352
West	0.3	0.0	1.8	0.7	1,628	0	9,537	3,779
JCL	1.7	0.5	3.3	0.9	8,796	2,405	17,251	4,591
SusYen	3.1	0.3	6.8	2.0	16,257	1,650	35,964	10,716
Fish	0.2	0.0	1.3	0.5	1,110	0	6,654	2,433
KTNE	1.6	0.6	3.0	0.7	8,694	3,413	15,821	3,865
Kenai	93.0	88.9	96.3	2.3	492,396	470,911	509,792	11,976
Kasilof	0.1	0.0	0.9	0.4	622	0	4,911	2,213

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.

Appendix C3.–Central District drift gillnet fishery, 2017: Temporal stratum stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Excluding corridor-only periods								
Dates: 6/19–8/21	Stock Composition (*n* = 386)				Harvest = 574,430			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	4.1	2.0	6.4	1.4	23,281	11,289	36,712	7,864
West	15.1	11.9	18.7	2.1	86,476	68,230	107,347	12,061
JCL	2.2	0.6	4.0	1.1	12,351	3,587	23,247	6,110
SusYen	8.9	5.7	12.6	2.1	51,219	32,830	72,243	12,314
Fish	1.6	0.5	3.1	0.8	8,983	2,766	17,722	4,624
KTNE	4.2	2.1	6.6	1.4	24,270	12,134	37,918	7,961
Kenai	51.5	45.7	57.3	3.5	295,704	262,273	329,146	20,235
Kasilof	12.6	8.7	16.7	2.4	72,146	49,755	95,706	13,794
Corridor-only periods								
Dates: 7/12–7/29	Stock Composition (*n* = 384)				Harvest = 286,810			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.5	0.0	2.7	0.9	1,530	0	7,843	2,674
West	12.4	8.8	16.7	2.5	35,486	25,245	48,040	7,043
JCL	6.7	4.4	9.4	1.5	19,310	12,641	27,095	4,433
SusYen	8.7	4.9	12.8	2.5	24,871	14,070	36,730	7,053
Fish	3.9	2.1	5.9	1.2	11,043	5,949	16,925	3,395
KTNE	2.0	0.3	4.7	1.3	5,795	967	13,415	3,864
Kenai	59.4	53.6	65.1	3.5	170,426	153,765	186,650	9,966
Kasilof	6.4	3.7	9.5	1.8	18,350	10,708	27,143	5,067

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.

Appendix C4.–Central District drift gillnet fishery, 2018: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/21–8/13	Stock Composition (*n* = 393)				Harvest = 397,383			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.3	0.0	1.8	0.0	1,270	0	6,997	2,963
West	11.0	4.8	18.3	0.0	43,702	19,174	72,682	16,778
JCL	10.6	7.5	13.9	0.0	41,966	29,697	55,217	7,714
SusYen	7.5	2.9	13.6	0.0	29,733	11,622	53,854	12,946
Fish	5.0	2.8	7.4	0.0	19,715	11,240	29,596	5,556
KTNE	4.0	0.7	8.8	0.0	15,905	2,810	35,037	10,275
Kenai	47.1	40.8	53.4	0.0	187,205	162,076	212,199	15,245
Kasilof	14.6	10.5	18.8	0.0	57,885	41,752	74,673	9,992

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.

APPENDIX D: KASILOF RIVER SPECIAL HARVEST AREA DRIFT AND SET GILLNET STOCK COMPOSTION AND STOCK-SPECIFIC HARVEST BY DATE, 2018

Appendix D1.–Kasilof River Special Harvest Area drift and set gillnet, 2018: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 8/8–8/12	Stock Composition (*n* = 375)				Harvest = 12,153			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.1	0.0	0.5	0.2	11	0	66	30
West	14.2	8.9	19.4	3.2	1,725	1,087	2,359	387
JCL	0.5	0.0	1.5	0.5	58	0	178	61
SusYen	1.7	0.0	6.6	2.2	212	0	799	268
Fish	1.4	0.0	3.4	1.2	167	0	414	142
KTNE	2.8	0.4	6.8	2.1	340	50	821	259
Kenai	20.5	15.6	26.0	3.2	2,493	1,890	3,166	388
Kasilof	58.8	53.3	64.1	3.3	7,147	6,482	7,786	401

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.

APPENDIX E: WESTERN AND KALGIN ISLAND SUBDISTRICTS (CENTRAL DISTRICT) SET GILLNET STOCK COMPOSTION AND STOCK-SPECIFIC HARVEST BY DATE, 2015–2018

Appendix E1.–Western and Kalgin Island subdistricts (Central District) set gillnet, 2015: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/3–8/17	Stock Composition (*n* = 395)				Harvest = 99,193			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	37.7	32.5	43.0	3.2	37,407	32,256	42,665	3,166
West	37.7	32.3	43.1	3.3	37,355	32,029	42,770	3,262
JCL	1.6	0.4	3.2	0.9	1,611	409	3,199	864
SusYen	0.3	0.0	2.5	1.0	340	0	2,505	1,004
Fish	0.0	0.0	0.0	0.2	32	0	43	205
KTNE	0.2	0.0	1.1	0.6	185	0	1,048	609
Kenai	17.1	12.6	21.8	2.8	16,921	12,532	21,632	2,764
Kasilof	5.4	3.2	7.9	1.5	5,342	3,139	7,874	1,446

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.

Appendix E2.–Western and Kalgin Island subdistricts (Central District) set gillnet fisheries, 2016: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/13–8/15	Stock Composition (*n* = 388)				Harvest = 81,542			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	38.5	32.0	45.3	4.0	31,413	26,101	36,914	3,275
West	25.4	17.6	34.0	5.1	20,733	14,313	27,696	4,120
JCL	4.2	2.4	6.2	1.2	3,409	1,988	5,086	942
SusYen	2.0	0.0	9.0	3.1	1,644	20	7,323	2,506
Fish	0.3	0.0	1.7	0.6	217	0	1,376	503
KTNE	0.3	0.0	2.3	1.0	242	0	1,856	841
Kenai	26.6	20.4	32.9	3.8	21,658	16,659	26,856	3,097
Kasilof	2.7	0.9	4.9	1.2	2,228	725	4,012	1,010

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.

Appendix E3.–Western and Kalgin Island subdistricts (Central District) set gillnet, 2017: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/12–8/14	Stock Composition (*n* = 386)				Harvest = 69,420			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	35.7	31.0	40.5	2.9	24,788	21,544	28,081	2,026
West	33.6	28.6	38.6	3.0	23,332	19,884	26,820	2,116
JCL	1.0	0.0	2.4	0.8	670	1	1,663	523
SusYen	1.9	0.1	4.6	1.4	1,311	52	3,205	996
Fish	0.6	0.0	1.6	0.5	416	0	1,116	372
KTNE	3.4	1.3	6.3	1.6	2,369	901	4,357	1,082
Kenai	21.5	16.7	26.6	3.1	14,951	11,565	18,474	2,118
Kasilof	2.3	0.0	4.9	1.5	1,583	0	3,388	1,052

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.

Appendix E4.–Western and Kalgin Island subdistricts (Central District) set gillnet, 2018: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/15–8/9	Stock Composition (*n* = 338)				Harvest = 69,260			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	49.0	42.5	55.0	0.0	33,945	29,437	38,089	2,622
West	31.5	24.3	38.7	0.0	21,832	16,817	26,822	3,034
JCL	2.5	0.9	4.7	0.0	1,766	644	3,269	820
SusYen	0.6	0.0	2.9	0.0	407	0	2,003	851
Fish	1.4	0.1	3.2	0.0	991	56	2,210	647
KTNE	1.0	0.0	4.2	0.0	725	0	2,882	1,040
Kenai	11.4	6.0	16.8	0.0	7,862	4,138	11,622	2,301
Kasilof	2.5	0.0	5.5	0.0	1,732	0	3,797	1,181

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.

APPENDIX F: UPPER SUBDISTRICT (CENTRAL DISTRICT) SET GILLNET STOCK COMPOSTION AND STOCK-SPECIFIC HARVEST BY DATE, 2015–2018

Appendix F1.–Upper Subdistrict set gillnet (Central District), 2015: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/22-7/15	Stock Composition (*n* = 298)				Harvest = 365,176			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.0	0.0	0.0	0.1	45	0	18	399
West	0.1	0.0	0.4	0.3	269	0	1,633	1,140
JCL	0.3	0.0	1.1	0.4	1,082	0	4,129	1,488
SusYen	0.1	0.0	0.6	0.4	346	0	2,133	1,449
Fish	2.5	0.6	4.8	1.3	9,004	2,088	17,542	4,705
KTNE	2.3	0.9	4.2	1.0	8,575	3,422	15,486	3,789
Kenai	30.0	23.2	37.4	4.3	109,554	84,874	136,719	15,808
Kasilof	64.7	57.2	71.6	4.4	236,301	208,758	261,580	16,063
Dates: 7/16–7/27	Stock Composition (*n* = 298)				Harvest = 570,709			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.0	0.0	0.1	0.3	272	0	719	1,580
West	0.0	0.0	0.0	0.1	43	0	13	455
JCL	2.1	0.6	4.1	1.1	11,711	3,169	23,630	6,395
SusYen	7.9	3.8	12.6	2.7	45,186	21,900	72,140	15,358
Fish	0.3	0.0	1.7	0.6	1,758	0	9,869	3,597
KTNE	0.0	0.0	0.1	0.3	279	0	767	1,605
Kenai	72.5	66.1	78.6	3.8	413,549	377,178	448,709	21,786
Kasilof	17.2	12.1	22.4	3.1	97,909	69,028	128,102	17,962
Dates: 7/28–8/12	Stock Composition (*n* = 299)				Harvest = 443,448			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.0	0.0	0.0	0.1	51	0	19	497
West	1.2	0.0	3.0	1.1	5,170	0	13,298	4,733
JCL	0.1	0.0	0.4	0.2	273	0	1,941	987
SusYen	0.5	0.0	3.7	1.4	2,232	0	16,530	6,261
Fish	0.1	0.0	0.7	0.3	435	0	3,162	1,442
KTNE	0.8	0.0	2.4	0.8	3,397	0	10,480	3,616
Kenai	89.5	84.8	93.4	2.6	396,854	376,257	414,258	11,644
Kasilof	7.9	4.5	11.7	2.2	35,036	19,984	52,054	9,788

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.

Appendix F2.–Upper Subdistrict (Central District) set gillnet fishery, 2016: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/23–8/9	Stock Composition (*n* = 390)				Harvest = 997,853			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.1	0.0	0.4	0.3	718	0	3,973	3,413
West	0.0	0.0	0.0	0.2	274	0	135	2,136
JCL	0.0	0.0	0.0	0.1	150	0	129	1,064
SusYen	0.6	0.0	4.5	1.6	5,587	0	45,045	16,392
Fish	0.0	0.0	0.0	0.1	179	0	130	1,302
KTNE	2.7	1.3	4.5	1.0	27,302	13,173	44,734	9,712
Kenai	82.4	77.5	86.7	2.8	822,306	773,245	865,175	28,176
Kasilof	14.2	10.4	18.2	2.4	141,336	103,986	181,296	23,504

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.

Appendix F3.–Upper Subdistrict (Central District) set gillnet fishery, 2017: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/24–8/15	Stock Composition (*n* = 390)				Harvest = 832,220			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.7	0.0	2.7	0.9	5,609	0	22,156	7,827
West	5.4	3.0	8.2	1.6	45,256	24,673	68,190	13,244
JCL	0.2	0.0	1.0	0.4	1,641	0	7,980	2,928
SusYen	7.8	4.4	11.7	2.2	65,262	36,693	97,377	18,450
Fish	3.7	2.0	5.7	1.1	30,461	16,488	47,109	9,365
KTNE	3.0	1.3	5.3	1.3	25,232	10,475	44,229	10,473
Kenai	50.3	44.6	56.1	3.5	418,589	371,409	467,062	29,063
Kasilof	28.9	24.3	33.5	2.8	240,171	202,243	278,540	22,955

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.

Appendix F4.–Upper Subdistrict (Central District) set gillnet fishery, 2018: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD). The all sections and fishing periods estimates were derived from the excluding 600 ft mixture and the three 600 ft mixtures using a stratified estimator (Table 1). Due to the lower sample sizes of the 600 ft mixtures, estimates are only reported for 3 reporting groups.

All sections and fishing periods								
Dates: 6/25–7/28	Stock Composition (*n* = 940)				Harvest = 278,431			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.3	0.0	0.8	0.0	718	24	2,259	799
West	0.9	0.3	2.1	0.0	2,543	849	5,812	1,923
JCL	1.0	0.2	2.2	0.0	2,862	608	6,021	1,710
SusYen	4.1	1.8	7.3	0.0	11,530	4,949	20,331	4,736
Fish	1.2	0.1	3.0	0.0	3,476	327	8,278	2,540
KTNE	1.5	0.1	4.0	0.0	4,265	279	11,153	3,565
Kenai	41.6	35.6	47.7	0.0	115,871	99,068	132,684	9,984
Kasilof	49.3	43.6	54.9	0.0	137,165	121,390	152,859	9,481
All sections (excluding 600 ft periods)								
Dates: 6/25–7/25	Stock Composition (*n* = 381)				Harvest = 245,688			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.1	0.0	0.8	0.3	338	0	1,910	738
West	0.3	0.0	1.5	0.7	689	0	3,650	1,800
JCL	1.0	0.1	2.3	0.7	2,448	234	5,588	1,696
SusYen	4.6	1.9	8.2	1.9	11,384	4,762	20,190	4,733
Fish	1.2	0.0	3.2	1.0	3,056	0	7,960	2,536
KTNE	1.5	0.0	4.4	1.4	3,784	0	10,749	3,536
Kenai	42.9	36.1	49.8	4.1	105,336	88,732	122,318	9,982
Kasilof	48.3	41.9	54.6	3.8	118,653	102,988	134,195	9,433

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Kasilof Section 600 ft[a]								
Dates: 7/18	Stock Composition (n = 186)				Harvest = 12,428			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Other Cook Inlet [b]	6.5	2.4	11.5	2.7	813	302	1,426	339
Kenai	26.7	20.0	33.8	4.3	3,314	2,482	4,195	531
Kasilof	66.8	59.8	73.4	4.1	8,301	7,430	9,116	511
Dates: 7/26 & 7/28	Stock Composition (n = 186)				Harvest = 11,258			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Other Cook Inlet [b]	24.2	16.6	31.9	4.6	2,722	1,872	3,592	522
Kenai	26.4	19.4	34.0	4.5	2,978	2,186	3,827	505
Kasilof	49.4	42.3	56.8	4.3	5,559	4,760	6,394	486
Kenai Section, North K Beach 600 ft[a]								
Dates: 7/19 & 7/21	Stock Composition (n = 187)				Harvest = 9,057			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Other Cook Inlet [b]	1.8	0.1	5.1	1.7	161	6	464	150
Kenai	46.9	38.3	56.5	5.5	4,244	3,471	5,118	500
Kasilof	51.4	41.9	59.9	5.5	4,652	3,793	5,425	498

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.

[a] These mixtures represent fishing periods restricted to within 600 feet of the mean high tide mark. The stock composition estimates may differ from what was reported in season due to postseason reanalysis using a different mixed stock analysis program.

[b] This reporting group includes populations from the *Crescent*, *West*, *JCL*, *SusYen*, *Fish*, and *KTNE* reporting groups.

APPENDIX G: EASTERN AND GENERAL SUBDISTRICTS (NORTHERN DISTRICT) SET GILLNET STOCK COMPOSTION AND STOCK-SPECIFIC HARVEST BY DATE, 2015–2018

Appendix G1.–Eastern and General subdistricts (Northern District) set gillnet fisheries, 2015: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/29–8/20	Stock Composition (*n* = 393)				Harvest = 51,426			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.0	0.0	0.0	0.1	5	0	2	45
West	26.9	20.0	34.9	4.6	13,858	10,274	17,968	2,375
JCL	9.7	6.2	13.2	2.1	4,963	3,205	6,773	1,079
SusYen	29.4	22.2	36.6	4.4	15,111	11,434	18,836	2,253
Fish	10.0	5.2	14.2	2.7	5,146	2,676	7,325	1,389
KTNE	14.9	9.6	22.6	4.0	7,644	4,929	11,606	2,064
Kenai	9.1	5.3	13.4	2.5	4,686	2,718	6,916	1,276
Kasilof	0.0	0.0	0.0	0.2	13	0	14	88

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.

Appendix G2.–Eastern and General subdistricts (Northern District) set gillnet fisheries, 2016: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in genetic analyses (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/30–8/18	Stock Composition (*n* = 387)				Harvest = 43,691			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.1	0.0	0.3	0.3	26	0	117	130
West	15.8	9.8	23.6	4.3	6,890	4,300	10,291	1,860
JCL	15.2	11.7	19.0	2.2	6,647	5,118	8,288	962
SusYen	19.7	13.1	26.3	4.0	8,591	5,741	11,511	1,754
Fish	15.8	12.4	19.4	2.2	6,891	5,396	8,482	940
KTNE	13.2	9.2	18.3	2.8	5,783	4,007	8,005	1,226
Kenai	20.2	14.8	25.7	3.3	8,817	6,484	11,235	1,447
Kasilof	0.1	0.0	0.7	0.4	46	0	319	196

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.

Appendix G3.–Eastern and General subdistricts (Northern District) set gillnet fisheries, 2017: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 6/29–8/17	Stock Composition (*n* = 384)				Harvest = 49,881			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.3	0.0	1.7	0.6	131	0	856	315
West	21.4	17.1	26.1	2.7	10,650	8,540	12,994	1,355
JCL	7.0	4.5	10.1	1.7	3,517	2,237	5,016	855
SusYen	12.0	7.5	16.9	2.8	5,984	3,736	8,414	1,403
Fish	21.8	18.1	25.8	2.4	10,881	9,041	12,877	1,188
KTNE	23.0	18.3	27.9	2.9	11,492	9,141	13,940	1,433
Kenai	13.7	9.9	17.9	2.4	6,853	4,917	8,920	1,186
Kasilof	0.7	0.0	2.7	1.0	373	0	1,368	506

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.

Appendix G4.–Eastern and General subdistricts (Northern District) set gillnet fisheries, 2018: Stock composition (%) and stock-specific harvest estimates, including the final number of samples used in the genetic analysis (*n*), mean, 90% credibility interval (CI), and standard deviation (SD).

Dates: 7/2–8/16	Stock Composition (*n* = 383)				Harvest = 49,845			
		90% CI				90% CI		
Reporting Group	Mean	5%	95%	SD	Mean	5%	95%	SD
Crescent	0.8	0.0	3.7	0.0	377	0	1,824	629
West	14.3	10.6	18.9	0.0	7,137	5,277	9,417	1,304
JCL	11.9	8.6	15.4	0.0	5,943	4,279	7,686	1,028
SusYen	17.4	12.7	22.5	0.0	8,676	6,346	11,199	1,500
Fish	19.7	14.9	24.8	0.0	9,817	7,450	12,364	1,499
KTNE	28.2	22.2	34.5	0.0	14,056	11,066	17,192	1,894
Kenai	7.6	4.1	11.6	0.0	3,768	2,032	5,765	1,147
Kasilof	0.1	0.0	0.8	0.0	71	0	389	160

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.

APPENDIX H: UPPER COOK INLET COMMERCIAL AND OFFSHORE TEST FISHERIES GENETIC MIXED-STOCK ANALYSIS STRATA, 2005–2018

Appendix H1.–Temporal strata analyzed in genetic mixed stock analysis of the Upper Cook Inlet commercial drift and set gillnet fisheries and Offshore Test fishery in 2005–2018 including: fishery, area name, statistical areas, year reported, and restriction (R) for each stratum.

Key: Gray boxes indicate which years were reported for a given stratum; "h" indicates that stock proportions and stock-specific harvests were reported, and "p" indicates that only stock proportions were reported.

			Year														
Fishery	Area	Stat. Area(s)	2005[a]	2006[a]	2007[a]	2008[a]	2009[b]	2010[c]	2011[d]	2012[e]	2013[e]	2014[f]	2015[g]	2016[g]	2017[g]	2018[g]	R[h]
Central District drift	Districtwide[i]	244-60	h	h	h	h	h	h	h	h	h	h	h	h	h	h	
	Corridor	244-55		h													
		244-56							h	h							
		244-56, 57									h	h	h	h	h		
Upper Subdistrict set/drift	Kasilof River Special Harvest Area	244-26		h													
		244-25, 26		h		h										h	
		244-25		h													
Upper Subdistrict set	Kasilof Section	244-21, 22, 31	h	h	h	h	h	h	h	h	h						
		244-21, 22, 31		h			h										0.5 mi
		244-21, 22, 31											p				1.5 mi
		244-21, 22, 31											p			h	600 ft
		244-21, 22	p	p	p	p	p	p	p	p	p						
		244-31	p	p	p	p	p	p	p	p	p						
	Kenai/East Foreland sections	244-32, 41, 42	h	h	h	h	h	h	h	h	h						
		244-32	p	p	p	p	p	p	p	p	p						
		244-32														h	600 ft
		244-41, 42	p	p	p	p	p	p	p	p	p						
	Subdistrictwide	244-21, 22, 31, 32, 41, 42										h	h	h	h	h	

-continued-

Fishery	Area	Stat. Area(s)	Year														R[h]
			2005[a]	2006[a]	2007[a]	2008[a]	2009[b]	2010[c]	2011[d]	2012[e]	2013[e]	2014[f]	2015[g]	2016[g]	2017[g]	2018[g]	
Kalgin Island Subdistrict set	Subdistrictwide	246-10, 20		h	h	h	h	h	h	h	h	h					
Western Subdistrict	Subdistrictwide[i]	245-20, 30 40, 55, 60		h	h	h	h	h	h	h	h	h					
Western/ Kalgin Island Subdistricts set	Subdistrictwide[i]	245-20, 30 40, 55, 60; 246-10, 20														h	
Eastern Subdistrict set	Subdistrictwide	247-70, 80, 90		h	h	h	h	h	h	h	h	h					
General Subdistrict set	Subdistrictwide	247-10, 20, 30, 41, 42, 43				h			h	h	h	h					
	Southwest	247-10, 20, 30					h	h									
	Northwest	247-41, 42, 43					h	h									
Eastern/ General Subdistricts set	Subdistrictwide	247-10, 20, 30, 41, 42, 43,70, 80, 90											h	h	h	h	

[a] 2005–2008 estimates reported in Barclay et al. (2010a; FMS 10-01).

[b] 2009 estimates reported in Barclay et al. (2010b; FMS 10-93).

[c] 2010 estimates reported in Barclay et al. (2013; FMS 13-56).

[d] 2011 estimates reported in Barclay et al. (2014; FDS 14-43).

[e] 2012 and 2013 estimates reported in Barclay et al. (2014; FDS 17-30).

[f] 2014 estimates reported in Barclay et al. (*In prep*).

[g] 2015–2018 estimates reported in this report.

[h] Distance from the mean high tide mark in which the fishery was restricted.

[i] Central District drift and Western Subdistrict strata do not include Chinitna Bay (245-10, Appendices B1–B4).

Appendix H2.–Strata analyzed in genetic mixed stock analysis of the Upper Cook Inlet Offshore Test fishery, 2005–2018: test fishery and years reported for each fishery. Both temporal and spatial strata were analyzed each year.

	Year													
Test Fishery	2005	2006[a]	2007[a]	2008[a]	2009[b]	2010[c]	2011[d]	2012[e]	2013[e]	2014[f]	2015	2016	2017	2018
Southern transect														
Northern transect(s)														

[a] 2005–2008 estimates reported in Barclay et al. (2010a; FMS 10-01).

[b] 2009 estimates reported in Barclay et al. (2010b; FMS 10-93).

[c] 2010 estimates reported in Barclay et al. (2013; FMS 13-56).

[d] 2011 estimates reported in Barclay et al. (2014; FDS 14-43).

[e] 2012 and 2013 estimates reported in Barclay et al. (2014; FDS 17-30).

[f] 2014 estimates reported in Barclay et al. (*In prep*).