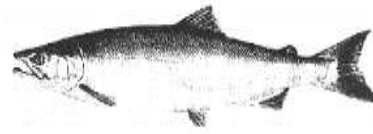


# ALASKA DEPARTMENT OF FISH AND GAME DIVISION OF COMMERCIAL FISHERIES NEWS RELEASE



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## 2018 UPPER COOK INLET COMMERCIAL SALMON FISHERY SEASON SUMMARY

The overall harvest and value of the 2018 commercial salmon fishery of Upper Cook Inlet (UCI) was poor (Table 1). The 2018 UCI commercial harvest of approximately 1.3 million salmon was 61% less than the recent 10-year average annual harvest of 3.4 million fish. While all five species of Pacific salmon are present in UCI, sockeye salmon are the most valuable, accounting for nearly 93% of the total value during the past 20 years. The 2018 total run pre-season forecast of sockeye salmon for UCI was 4.6 million fish (Table 2), while the actual in-season run was 3.1 million fish, or 32% less than forecast. The largest deviations from the 2018 forecast occurred with 3-year ocean sockeye salmon (ages 1.3 and 2.3), which returned at 10% and 50% of forecasted levels, respectively. The estimated exvessel value of the 2018 harvest of all salmon species of approximately \$11 million was 67% less than the previous 10-year average annual exvessel value of \$31 million. All species-specific exvessel values other than coho salmon were significantly below average in 2018 in UCI.

In UCI there are seven sockeye salmon, four king salmon, four coho salmon, and one chum salmon systems with escapement goals that were monitored in 2018 for in-season management decisions (Table 3). For the 2018 season, sockeye salmon escapement goals were exceeded at two systems (Kasilof River and Fish Creek which drains Big Lake), and met at four systems (Kenai River, Larson, Chelatna, Judd, and Packers lakes). Timing of the inlet wide sockeye salmon run at the Anchor Point Offshore Test Fish (OTF) transect was estimated to be four days late. In 2018, the lower end of the Kenai River early-run king salmon optimal escapement goal (OEG) was not achieved, but the late-run Kenai River king salmon run ended within its sustainable escapement goal (SEG) range. In Northern Cook Inlet (NCI), the lower end of the Deshka River and Little Susitna River king salmon SEGs were not achieved. Coho salmon assessments on all UCI systems were either above (Jim Creek and Fish Creek) or within (Little Susitna River and Deshka River) their escapement goals in 2018. The lower end of the SEG for chum salmon in Chinitna Bay was not achieved in 2018.

## **SOCKEYE SALMON**

### ***2018 Run and Fishery Summary***

The 2018 total run of sockeye salmon to UCI, which includes estimates of commercial, sport, personal use, educational, subsistence harvests, and escapement of approximately 3.1 million fish was 32% less than the preseason forecast (Table 2). The Kenai River run fell short of the forecast by approximately 1.1 million sockeye salmon and Fish Creek fell short of the forecast by 120,000 sockeye salmon. The Kasilof River sockeye salmon total run estimate was 167,000 fish short of the forecast, while the number of sockeye salmon returning to the Susitna River and all other systems (minor systems) were also considerably less than forecast in 2018.

A similar pattern of sockeye salmon passage in the Kenai River was observed in 2018 as was seen in 2015 through 2017. For the fourth year in a row, the peak day of sockeye salmon passage in the Kenai River was 54% less than peak count days of recent years. In 2018, the peak day of passage occurred on July 21, with 62,623 sockeye salmon compared to a 2005–2014 average of 135,000 fish. The 2018 figure represented the second lowest peak day of passage in the past 10 years. This is further exemplified by the fact that commercial fishing on this stock had been closed (see below) for the previous six days to increase daily passage into the Kenai River. In the previous 10 years, the average date where 50% of sockeye salmon passage has occurred in the Kenai River is July 23. In 2018, 50% of the final passage estimate did not occur until August 3, or 11 days later than average. The late run timing and smaller peak complicated management in 2018 as management plans with specific dates and triggers were developed to account for average run entry timing and magnitude.

The 2018 UCI commercial harvest of 815,000 sockeye salmon was approximately 70% less than the 2008–2017 average annual harvest of 2.8 million fish. The 2018 sockeye salmon harvest was the 7<sup>th</sup> smallest on record and the smallest harvest since 1975. Sockeye salmon prices varied during the season but based on an estimated average price of \$2.04 per pound, the total exvessel value of the 2018 UCI sockeye salmon harvest was approximately \$8.7 million, representing 79% of the total exvessel value of salmon in UCI.

### ***Upper Subdistrict Set Gillnet and Central District Drift Gillnet Fisheries***

Drift gillnetting opens in the Central District (Figure 1) by regulation on the third Monday in June or June 19, whichever is later, which meant the drift fishery opened the 2018 season on June 21. The Kasilof Section set gillnet fishery (statistical areas 244-21, 244-22, and 244-31; Figure 2) opens by regulation on or after June 25, but may open any time after June 20 if 50,000 sockeye salmon are estimated to have entered the Kasilof River. In 2018, sockeye salmon passage in the Kasilof River through midnight on June 24 was only 23,477 fish, so the Kasilof section setnet fishery did not open until Monday, June 25. The Kenai and East Foreland sections set gillnet fishery (statistical areas 244-32, 244-41, and 244-42; Figure 2) opens by regulation on the first Monday or Thursday on or after July 8; in 2018, this meant Monday, July 9 was the first day of fishing for Kenai/East Foreland section.

The 2018 UCI preseason forecast projected a total run of approximately 4.6 million sockeye salmon (Table 2), with a total harvest estimate (sport, personal use and commercial) of 2.6 million fish and a commercial fisheries harvest of approximately 1.9 million fish. The sockeye salmon run forecast to the Kenai River in 2018 was 2.5 million fish which meant that

management of the drift and set gillnet fisheries fell in the middle run-size tier under provisions for Kenai River sockeye salmon runs between 2.3 and 4.6 million fish.

Specifically, management in the middle tier meant that from July 8 through August 10, the Upper Subdistrict set gillnet (ESSN) fishery was normally open for the regulatory Monday and Thursday 12-hour fishing periods. This tier also allowed up to 51 additional hours of fishing per week when sufficient fish abundance warranted further harvest. If needed, these 51 additional hours of fishing time are implemented by emergency order (EO) in conjunction with weekly mandatory closed periods (“windows”); one mandatory closure for 24 consecutive hours beginning between 7:00 p.m. Monday and 7:00 a.m. Wednesday, with a second mandatory closure for 36 consecutive hours beginning between 7:00 a.m. Thursday and 7:00 a.m. Friday. The drift fishery is open for district-wide fishing periods from the beginning of the season through July 8. From July 9–15, both regular fishing periods are limited to Drift Area 1 and the Expanded Kenai and Expanded Kasilof Sections (Figures 3 and 4). For the middle-sized run tier, the department has the option of opening the drift fishery for one additional fishing period in Drift Area 1 and the Expanded corridors during the July 9–15 time frame. From July 16–31, during one regular 12-hour fishing period per week, the drift fishery is restricted to one or more of the following sections: Expanded Kenai Section, Expanded Kasilof Section, Anchor Point Section, or Drift Area 1. The remaining 12-hour weekly fishing period is restricted to one or more of the first three sections just mentioned, but not Drift Area 1. All additional fishing time provided the drift fishery from July 16–31 is to be limited to either or both the Expanded corridors or Anchor Point Section.

In 2018, from the beginning of the ESSN fishing season on June 25 through the end of July, commercial fishing management strategy was largely predicated upon maximizing harvest of sockeye salmon while closely monitoring late-run king salmon abundance in the Kenai River. However, due primarily to a weak and late run of sockeye salmon to the Kenai River, fishing time in the Kenai and East Foreland sections set gillnet fishery was significantly reduced. More fishing time was provided in the Kasilof Section setnet fishery than north of the Blanchard Line, but was restricted to fishing within one-half mile of shore during two fishing periods and within 600’ of shore during four fishing periods. For the first time in UCI history, the North Kalifornsky Beach (NKB) stat area (244-31) was opened within 600’ of shore on two different days (July 19 and 21). The objective of the one-half mile and 600’ fishing periods was to reduce the harvest of Kenai River king and sockeye salmon while attempting to focus harvest on Kasilof River sockeye salmon. The total commercial harvest of sockeye salmon through Thursday, July 19, was 639,828 fish, or about 34% of the expected harvest for the season. Yet, sockeye salmon passage in the Kenai River was only 173,534 fish, with the run normally about 36% complete. Based on this, achieving the Kenai River minimum inriver goal of 1,000,000 fish would require a significant reduction in harvest of this stock so that passage rates would increase. Kasilof River sockeye salmon passage is typically about 64% complete through July 19, and the 2018 total passage estimate of 188,345 fish for that date suggested that the BEG of 160,000–340,000 fish could be met, even with a reduction in harvest of this stock.

On July 24, Commercial Fisheries staff made a formal inseason estimate of the total sockeye salmon run to date, including an estimate of the run yet to come. Based on OTF data, the 2018 sockeye salmon run was expected to be two to four days late and the Kenai River sockeye salmon run was now expected to be less than 2.3 million fish. Based on this inseason projection, management of the ESSN and Central District drift fisheries now followed the lower tier

provisions for Kenai River sockeye salmon run sizes of less than 2.3 million fish. However, because the Kenai River sport fishery remained restricted to fishing with no bait and no retention of king salmon beginning on July 18, the *Kenai River Late-Run King Salmon Management Plan* required the ESSN fishery to be restricted to no more than 24 additional fishing hours per week, with no weekly mandatory closed fishing periods. The reduced additional fishing hours turned out to be inconsequential as low sockeye salmon run entry limited the use of extra hours. From July 16–31 in the drift gillnet fishery, for Kenai River sockeye salmon runs less than 2.3 million fish, fishing during all regular 12-hour fishing periods, and any added fishing time, was to be restricted to the Expanded Kenai and Expanded Kasilof sections (Figure 3). Based on the lower run size estimate, the Kenai River sockeye salmon inriver goal was lowered to 900,000 to 1,100,000 fish.

On July 26, with the paired king salmon restrictive provisions in place, and because of concerns for sockeye salmon abundance in the Kenai River, only the Kasilof Section 600' fishery was open. Drifting in the expanded corridors and setnetting in the Kenai/ East Foreland sections was not open on July 26. Fishing in the Kasilof 600' fishery was justified by genetic mixed stock analysis (MSA) stock composition estimates that showed that Kenai River sockeye salmon were encountered at a lower rate in the Kasilof section 600' fishery as compared to NKB 600' fishery (Appendices A1 and A2). The NKB 600' fishery remained closed because MSA showed that approximately 50% of fish harvested in this area were Kenai sockeye salmon. This proportion suggested that too many Kenai sockeye salmon could be harvested if this area was opened. This was the first time that MSA has been used as a tool to guide inseason management decisions in UCI. Three MSA harvest samples were analyzed in season during 2018 at a cost of \$30,000. By Friday, July 28, the cumulative sockeye salmon passage estimate in the Kenai River was 408,177 fish. Based on this figure, and assuming the run would be two to four days late, the minimum inriver goal of 900,000 fish was still not projected to be met. Therefore, the July 28 fishing period was once again limited to fishing with setnets only in the Kasilof section within 600' of shore. The July 30, August 2, and August 6 openings were entirely closed to all ESSN and drift net commercial fishing to conserve Kenai River sockeye salmon. Drifting was opened in Drift Area 3 only on August 7 to focus harvest on stocks other than Kenai River sockeye salmon.

From August 8–12, the Kasilof River Special Harvest Area (KRSHA) was opened for both set and drift gillnets to target Kasilof River sockeye salmon; however, even with this targeted fishery being opened for five days, the upper end of the Kasilof River sockeye salmon OEG was exceeded on August 13. On August 18, after numerous restrictions and closures to the commercial harvest of Kenai River sockeye salmon, run projections for this stock finally projected the inriver goal would be met. Over the next two days, Kenai River sockeye salmon run entry continued to increase, and the inriver goal of 900,000 was achieved on August 20. Escapement projections now showed a potential for the Kenai River sockeye salmon run to be more than seven days late, and as of August 21 the sonar site had passed more than 123,000 fish in the previous 5 days. Therefore, on August 23, the regularly scheduled drift gillnet opening for Areas 3 and 4 was expanded to include Drift Area 1 to target late-running Kenai River sockeye salmon. However, due to low participation and very small harvest of sockeye salmon during this fishing period, all subsequent drift gillnet fishing periods were limited to Drift Areas 3 and 4 and later included Chinitna Bay. All UCI commercial fisheries were closed on October 5 for the 2018 season.

### ***Upper Subdistrict setnet 2018 harvest***

Total sockeye salmon harvest in 2018 in the Upper Subdistrict setnet fisheries was 284,547 fish. From June 25 through August 15, the Kasilof Section set gillnet fishery inclusive of KRSHA was open on 20 different days, harvesting approximately 230,799 sockeye salmon. The average annual sockeye salmon harvest in the Kasilof Section during the previous 10 years (excluding 2012 due to significant restrictions to the fishery for king salmon conservation) was 646,000 fish. The Kasilof River Special Harvest Area was opened on five days in 2018 and 11,805 sockeye salmon were harvested. From July 10 through August 14, the Kenai and East Foreland sections were open on six different days, producing a total sockeye salmon harvest of 65,547 fish. This was only 15% of the previous 10-year (excluding 2012) average annual sockeye salmon harvest of 443,000 fish for those sections.

### ***Drift harvest 2018***

From June 19 through August 14, the drift fleet fished a total of 19 days as follows: three days in the regular Kasilof Section; two days in the Expanded Kenai/Kasilof sections; one day in the Expanded Kenai/Kasilof and Anchor Point sections; two days in Drift Area 3; one day in Drift Area 3 and Drift Area 4; four days in Kasilof Special Harvest Area; and five days in all of the Central District. Beginning with Thursday, August 17, all Monday/Thursday regular drift fishing periods would normally be restricted to Drift Area 3 and 4. In 2018, an additional drift period was allowed into Drift Area 1 on August 23 in an attempt to harvest surplus Kenai River sockeye salmon. Two aerial surveys of chum salmon escapement were conducted in Chinitna Bay (Chinitna River/Clearwater Creek, (Figure 5)) in 2018. Chinitna Bay survey data indicated the minimum SEG for chum salmon was not achieved and drift gillnetting was not allowed until August 31 when, based on run timing, the chum salmon run in Chinitna Bay is nearly complete. Specifically, Chinitna Bay was opened to drift and set gillnetting for 12-hour fishing periods on Tuesdays and Fridays, beginning on Friday, August 31. The total UCI drift gillnet harvest in 2018 was approximately 397,540 sockeye salmon, which was about 75% less than the average annual harvest of 1.6 million fish from the previous 10 years. The peak day of harvest in the drift fleet occurred on Thursday, July 12, where 313 vessels harvested approximately 89,602 sockeye salmon, or 313 fish/boat. The average peak harvest per boat was 919 for the previous 10 years.

A comparative examination of the 2018 proportional sockeye salmon harvest in the ESSN vs drift gillnet fisheries shows that harvest between set and drift gillnet gear was very close to the previous 10-year average. The drift harvest of 397,584 sockeye salmon was 57% of the total harvest between the two gear types; compared to the previous 10-year average of 56% (2012 was excluded). The ESSN fishery harvested approximately 296,352 fish, or 43% of the total sockeye salmon harvest compared to their previous 10-year average of 44%.

### ***Western Subdistrict***

By regulation, the Western Subdistrict (Figure 1) set gillnet fishery opened for regular periods on Monday, June 18. This fishery primarily harvests sockeye salmon returning to the Crescent River. The Crescent River sonar program was discontinued in 2014. In 2018, sockeye salmon harvest rates in the set gillnet fishery from the beaches near the Crescent River area were consistent with historical harvest rates when the fishery was provided additional fishing time due to increased sockeye salmon passage into the Crescent River. Therefore, an EO was issued on

July 6 opening that portion of the Western Subdistrict south of the latitude of Redoubt Point from 6:00 a.m. until 10:00 p.m. on Mondays, Thursdays, and Saturdays each week from July 7 through August 7. In 2018, approximately 35,405 sockeye salmon were harvested by setnetters in the Western Subdistrict. This was 13% less than the average annual harvest of approximately 41,000 fish during the previous 10 years.

### ***Kustatan Subdistrict***

The Kustatan Subdistrict includes those waters from the Drift River terminal to the Northern District boundary near the West Foreland (Figure 1). From 1993–2017, approximately nine permit holders per year have reported harvest from this area. In 2018, 14 permits reported harvest. The majority of participation and harvest (more than 92% of the harvest) typically comes from the Big River sockeye salmon fishery, which is an early season fishery limited to one net per permit holder and occurs from June 1–24. Approximately 2,668 sockeye salmon were harvested in the Kustatan Subdistrict in 2018, with 1,295 of these harvested during the Big River fishery. The 2018 sockeye salmon harvest was approximately 18% less than the average annual harvest of 3,268 fish during the previous 10 years.

### ***Kalgin Island Subdistrict***

The Kalgin Island Subdistrict (Figure 1) opened for regular fishing periods beginning June 27 except for the west side of Kalgin Island which was open for commercial fishing on Mondays, Wednesdays, and Fridays from June 1–24 as part of the Big River sockeye salmon fishery. In 2018, approximately 34,270 sockeye salmon were harvested from the Kalgin Island Subdistrict, with nearly 11,400 (26%) of those fish taken during the Big River sockeye salmon fishery. The average annual sockeye salmon harvest on Kalgin Island during the previous 10 years was approximately 54,889 fish, with roughly 11,500 of those fish harvested during the early season Big River fishery. A remote video system was deployed at Packers Creek to monitor sockeye salmon escapement into Packers Lake. A review of the video data mid-season did not support any additional fishing periods beyond Monday and Thursday regular periods in the Kalgin Island Subdistrict in 2018 but the lower end of the escapement goal was achieved by the end of the season.

### ***Northern District***

Commercial fishing in the Northern District (Figure 1) in the directed king salmon fishery (see king salmon section below), and the first directed sockeye salmon period on June 25 were closed in 2018 due to low preseason estimates of king salmon abundance for NCI stocks. In 2018, approximately 48,310 sockeye salmon were harvested in the Northern District. This harvest was 25% greater than the 2008–2017 average annual harvest of 38,734 sockeye salmon, yet approximately 44% less than the 1966–2017 average of nearly 87,000 fish.

## **COHO SALMON**

### ***2018 Run and Fishery Summary***

The 2018 harvest estimate of approximately 220,679 coho salmon in all commercial fisheries in UCI was 32% greater than the recent 10-year (2008–2017) average annual harvest of approximately 180,000 fish (Table 2). The 2018 drift gillnet harvest of 108,016 coho salmon was very close to the recent 10-year average of approximately 107,000 fish. The Northern District set

gillnet harvest of 64,000 coho salmon in 2018 was the largest harvest since 2000 and was approximately 78% greater than the 36,000 annual average harvest from the previous 10 years.

In UCI, there are four coho salmon systems with escapement goals that are monitored inseason with weirs, and one monitored with a foot survey. Fish Creek, Little Susitna, and Deshka rivers have weirs, and McRoberts Creek is counted with foot surveys. The goal at Fish Creek is an SEG of 1,200–4,400 fish. Coho salmon counts at the Fish Creek weir occurred from July 20 to September 24 and produced a final estimate of 5,022 fish, exceeding the upper end of the SEG. During the 2018 season, the sport fishing bag and possession limit for coho salmon was increased to four fish beginning at 5 a.m. on August 9 in waters open to salmon fishing on Fish Creek. In addition, fishing was allowed at Fish Creek seven days per week, from 5 a.m. to 10 p.m.

The Little Susitna River has a coho salmon SEG of 10,100–17,700 fish. Coho salmon escapement was counted at the Little Susitna weir from July 6 through August 8, when the weir integrity was lost due to high water, and the total passage estimate was at 7,583 fish. At the time when high water inundated the Little Susitna weir, coho salmon counts were increasing and as a result, sport fishery bag limits were raised as of August 8 to 3 fish per day. This action was taken based on the presumption that the SEG would be met or exceeded, even with the additional harvest.

A new SEG of 10,200–24,100 fish was adopted at the 2017 UCI Board of Fisheries (Board) meeting for Deshka River coho salmon. In the 2<sup>nd</sup> year of assessing coho salmon escapement in this drainage as it related to the SEG, 12,933 fish were counted through the weir by August 29. In response to the strong coho salmon escapement, the Division of Sport Fish issued an EO on August 14 increasing the sport fishing bag and possession limit for coho salmon to four fish per day and eight fish in possession, in all waters open to salmon fishing in the Susitna River Drainage.

Finally, there is a coho salmon foot survey SEG of 450–1,400 fish at McRoberts Creek, which drains into Jim Creek of the Knik River drainage. In 2018, the foot survey was conducted on September 21 and produced a count of 758 fish, which meant the SEG was achieved for this system.

Based on an average price per pound of \$.94, the estimated exvessel value of the 2018 commercial coho salmon fishery was approximately \$1.3 million or 11% of the total exvessel value in Upper Cook Inlet. This was approximately two times greater than the recent 10-year (2008–2017) average exvessel value of \$699,300 for coho salmon in UCI.

#### **PINK SALMON SUMMARY**

Pink salmon runs in UCI are even-year dominant, with odd-year average annual harvests typically less than one-sixth of even-year harvests. The 2018 UCI commercial pink salmon harvest was estimated to be approximately 126,605 fish, which was 84% lower than the average annual harvest of nearly 386,413 fish from the previous 10-years of even-year harvests (Table 1). Time restrictions during the sockeye salmon season limited harvest of pink salmon in 2018. Using an average weight of 3.75lb/fish and an average price of \$0.25/lb, the estimated exvessel value for the 2018 pink salmon harvest was \$118,000 or 1% of the total exvessel value of salmon in UCI.

### **CHUM SALMON SUMMARY**

The 2018 harvest of 129,682 chum salmon was approximately 13% lower than the previous 10-year average annual harvest of 165,000 fish (Table 1). There is only one chum salmon escapement goal in UCI, which is an aerial survey SEG of 3,800–8,000 fish in Chinitna River/Clearwater Creek, the major tributary that drains into Chinitna Bay. In 2018, only 2,300 chum salmon were observed in this watershed during aerial survey flights, and as such Chinitna Bay was not opened to drift gillnetting until August 31, after the chum salmon run, to focus on coho salmon. The exvessel value of the 2018 UCI commercial chum salmon harvest was approximately \$733,000 or 7% of the total exvessel value in UCI.

### **KING SALMON SUMMARY**

In UCI, there are two commercial fisheries where the majority of king salmon are harvested. These are the set gillnet fisheries in the Northern District and in the Upper Subdistrict of the Central District. Moderate increases have been seen in king salmon numbers for the past four years, but runs were expected to be below average in Southcentral Alaska for the 2018 season. The 2018 king salmon return turned out to be significantly below average and lower than the preseason forecasts leading to inseason conservation measures in all fisheries in order to reduce the harvest of king salmon stocks.

In the Northern District, the directed king salmon set gillnet fishery was closed for the entire 2018 season to reduce the harvest of NCI king salmon. In addition, the initial period for sockeye salmon on June 25 was also closed in the Northern District set gill net fishery to conserve king salmon. The estimated king salmon harvest in the Northern District regular salmon fishery in 2018 was only 130 fish or 93% less than the average total king harvest of 1,986 fish from this district when the directed fishery is open.

The 2018 preseason run forecast for Deshka River king salmon was approximately 12,800 fish. The Deshka River SEG is 13,000–28,000 fish. Based on this forecast the 2018 run to the Deshka River would not be large enough to achieve the SEG, even with no harvest. The preseason outlook for the all other NCI king salmon stocks in 2018 was poor. This followed 2017 when weak king salmon production also occurred in northern streams resulting in 12 of the 14 monitored king salmon stocks not achieving their escapement goals, including all 7 king salmon Stocks of Concern. The estimated final 2018 escapement of king salmon in the Deshka River was approximately 8,544 fish, which was below the lower end of the SEG. Additionally, the BOF adopted a new king salmon SEG of 2,100–4,300 fish for the Little Susitna River at its 2017 UCI finfish meeting. The Little Susitna River weir count in 2018 was only 549 king salmon which meant that, although the weir was submerged for considerable time due to high rainfall, the SEG was not achieved.

Late-run king salmon returning to the Kenai and Kasilof rivers are the primary king salmon stocks that are harvested in UCI commercial fisheries. Kenai River late-run king salmon are managed to meet an SEG of 13,500–27,000 large (>75cm mid eye to tail fork) fish. If restrictions are implemented in the sport fishery to achieve the SEG (from July 1–31), restrictive “paired” actions are also required in the ESSN fishery.

The 2018 preseason forecast was for a total run of 21,503 “large” Kenai River late-run king salmon. Based on low preseason abundance estimate for late run kings and low abundance of the early run king salmon stock, the 2018 late-run sport fishery in the Kenai River was restricted to no bait on July 1 and further restricted to no retention on July 16. As a result of the sport fishery being restricted to no bait, beginning July 1 the ESSN commercial fishery was restricted to



fishing no more than 48 hours per week with a 36-hour “Friday” no-fishing window per week. When the sport fishery was further restricted to no retention, the ESSN fishery was limited to fishing no more than 24 hours per week, with no mandatory closures. At the 2017 Board meeting, the East Foreland Section (statistical area 244-42) was exempted from these “paired” restrictive provisions due to very low king salmon harvest in this area. However, due to low Kenai sockeye salmon run entry extra hours for the East Foreland Section were limited. Beginning August 1, after the Kenai River king salmon sport fishery is closed, the paired restrictive provisions are no longer in effect, but the ESSN fishery is still managed to meet both king and sockeye salmon escapement goals. Low abundance of sockeye salmon in the Kenai River resulted in the entire ESSN fishery outside of the KRSHA being closed from July 30 to the end of the season on August 15.

The 2018 year-end king salmon harvest in all UCI commercial fisheries was 3,233, which was 62% less than the previous 10-year (2008–2017) average annual harvest of 8,430 fish (Table 1). Of this total, the ESSN fishery harvested 2,172 king salmon, or 67% of the harvest. Of the 2,172 king salmon harvested in the ESSN fishery, an estimated 564, or 26%, were large king salmon, and a total of 395, or 18%, were large Kenai River late-run origin fish. The drift fishery harvested 486 king salmon of all sizes and all stocks. Using a price of \$3.27 per pound for king salmon, the estimated exvessel value of the 2018 harvest was \$139,872, or approximately 1.3% of the total exvessel value of salmon in UCI.

Late-run king salmon passage in the Kenai River was counted at the River Mile 14 sonar site from July 1 through August 20. The final 2018 sonar count of large late-run Kenai River king salmon was 16,957 with an escapement estimate of 17,343 fish accounting for fish spawning below the sonar site. Thus, the large fish SEG of 13,500-27,000 fish for Kenai River late-run king salmon was achieved.

Table 1.—Upper Cook Inlet commercial salmon harvest by species, 1970–2018.

Year	King	Sockeye	Coho	Pink	Chum	Total
1970	8,336	732,605	275,399	814,895	776,229	2,607,464
1971	19,765	636,303	100,636	35,624	327,029	1,119,357
1972	16,086	879,824	80,933	628,574	630,103	2,235,520
1973	5,194	670,098	104,420	326,184	667,573	1,773,469
1974	6,596	497,185	200,125	483,730	396,840	1,584,476
1975	4,787	684,752	227,379	336,333	951,796	2,205,047
1976	10,865	1,664,150	208,695	1,256,728	469,802	3,610,240
1977	14,790	2,052,291	192,599	553,855	1,233,722	4,047,257
1978	17,299	2,621,421	219,193	1,688,442	571,779	5,118,134
1979	13,738	924,415	265,166	72,982	650,357	1,926,658
1980	13,798	1,573,597	271,418	1,786,430	389,675	4,034,918
1981	12,240	1,439,277	484,411	127,164	833,542	2,896,634
1982	20,870	3,259,864	793,937	790,648	1,433,866	6,299,185
1983	20,634	5,049,733	516,322	70,327	1,114,858	6,771,874
1984	10,062	2,106,714	449,993	617,452	680,726	3,864,947
1985	24,088	4,060,429	667,213	87,828	772,849	5,612,407
1986	39,256	4,792,072	757,353	1,300,958	1,134,817	8,024,456
1987	39,440	9,469,248	449,750	109,389	349,150	10,416,977
1988	29,080	6,843,833	561,048	471,080	710,615	8,615,656
1989	26,738	5,011,159	339,931	67,443	122,051	5,567,322
1990	16,105	3,604,710	501,739	603,630	351,197	5,077,381
1991	13,542	2,178,797	426,498	14,663	280,230	2,913,730
1992	17,171	9,108,353	468,930	695,861	274,303	10,564,618
1993	18,871	4,755,344	306,882	100,934	122,770	5,304,801
1994	19,962	3,565,609	583,793	523,434	303,177	4,995,975
1995	17,893	2,952,096	447,130	133,578	529,428	4,080,125
1996	14,306	3,888,922	321,668	242,911	156,520	4,624,327
1997	13,292	4,176,995	152,408	70,945	103,036	4,516,676
1998	8,124	1,219,517	160,688	551,737	95,704	2,035,770
1999	14,383	2,680,518	126,105	16,176	174,554	3,011,736
2000	7,350	1,322,482	236,871	146,482	127,069	1,840,254
2001	9,295	1,826,851	113,311	72,560	84,494	2,106,511
2002	12,714	2,773,118	246,281	446,960	237,949	3,717,022
2003	18,503	3,476,161	101,756	48,789	120,767	3,765,976
2004	26,922	4,927,084	311,058	357,939	146,165	5,769,168
2005	27,667	5,238,699	224,657	48,419	69,740	5,609,182
2006	18,029	2,192,730	177,853	404,111	64,033	2,856,756
2007	17,625	3,316,779	177,339	147,020	77,240	3,736,003
2008	13,333	2,380,135	171,869	169,368	50,315	2,785,020
2009	8,750	2,045,794	153,210	214,321	82,808	2,504,883
2010	9,900	2,828,342	207,350	292,706	228,863	3,567,161
2011	11,248	5,277,995	95,291	34,123	129,407	5,548,064
2012	2,527	3,133,839	106,775	469,598	269,733	3,982,472
2013	5,398	2,683,224	260,963	48,275	139,365	3,137,225
2014	4,660	2,343,529	137,376	642,879	116,093	3,244,537
2015	10,798	2,649,667	216,032	48,004	275,960	3,200,461
2016	10,027	2,396,943	147,495	382,468	123,679	3,060,612
2017	7,660	1,849,234	303,642	167,842	243,600	2,571,987
2018 <sup>a</sup>	3,233	814,516	220,679	126,605	129,682	1,294,241
1970-2017 Avg	15,202	3,036,717	292,727	390,037	399,908	4,134,592
2008-2017 Avg	8,430	2,758,870	180,000	246,958	165,982	3,360,241

<sup>a</sup> 2018 data are preliminary

Table 2.–Upper Cook Inlet sockeye salmon forecast versus actual run by river system, 2018.

System	Forecast	Actual	Difference
Kenai River	2,485	1,641	-34%
Kasilof River	866	699	-19%
Susitna River	329	249	-24%
Fish Creek	211	90	-57%
Minor Systems	665	415	-38%
Overall Total	4,556	3,094	-32%

Table 3.–Upper Cook Inlet sockeye salmon goals and passage (or counts), 2018.

System	2018 Estimate	Goal type <sup>a</sup>	Lower goal	Upper goal
Kenai River	1,034,771 <sup>b</sup>	Inriver	1,000,000	1,300,000
		SEG	700,000	1,200,000
Kasilof River	394,288 <sup>b,c</sup>	BEG	160,000	340,000 <sup>c</sup>
		OEG	160,000	390,000
		SEG	15,000	35,000
Larson Lake	23,444	SEG	15,000	35,000
Chelatna Lake	20,437	SEG	20,000	45,000
Judd Lake	30,844	SEG	15,000	40,000
Fish Creek	71,566	SEG	15,000	45,000
Packers Creek	16,247 <sup>d</sup>	SEG	15,000	30,000

<sup>a</sup> BEG=Biological Escapement Goal, SEG=Sustainable Escapement Goal, OEG=Optimum Escapement Goal, and Inriver=Inriver Goal.

<sup>b</sup> Sonar estimate at river mile 19 on Kenai River and river mile 8 on Kasilof River; not escapement. Harvest upstream of sonar must be subtracted to estimate escapement. Sport harvest estimated from Statewide Harvest Survey; results for 2018 available spring of 2019 at the earliest.

<sup>c</sup> The Kasilof River goal in 2018 was a biological escapement goal (BEG) of 160,000 to 340,000.

<sup>d</sup> Incomplete count. Video data collected from June 15 through August 20.

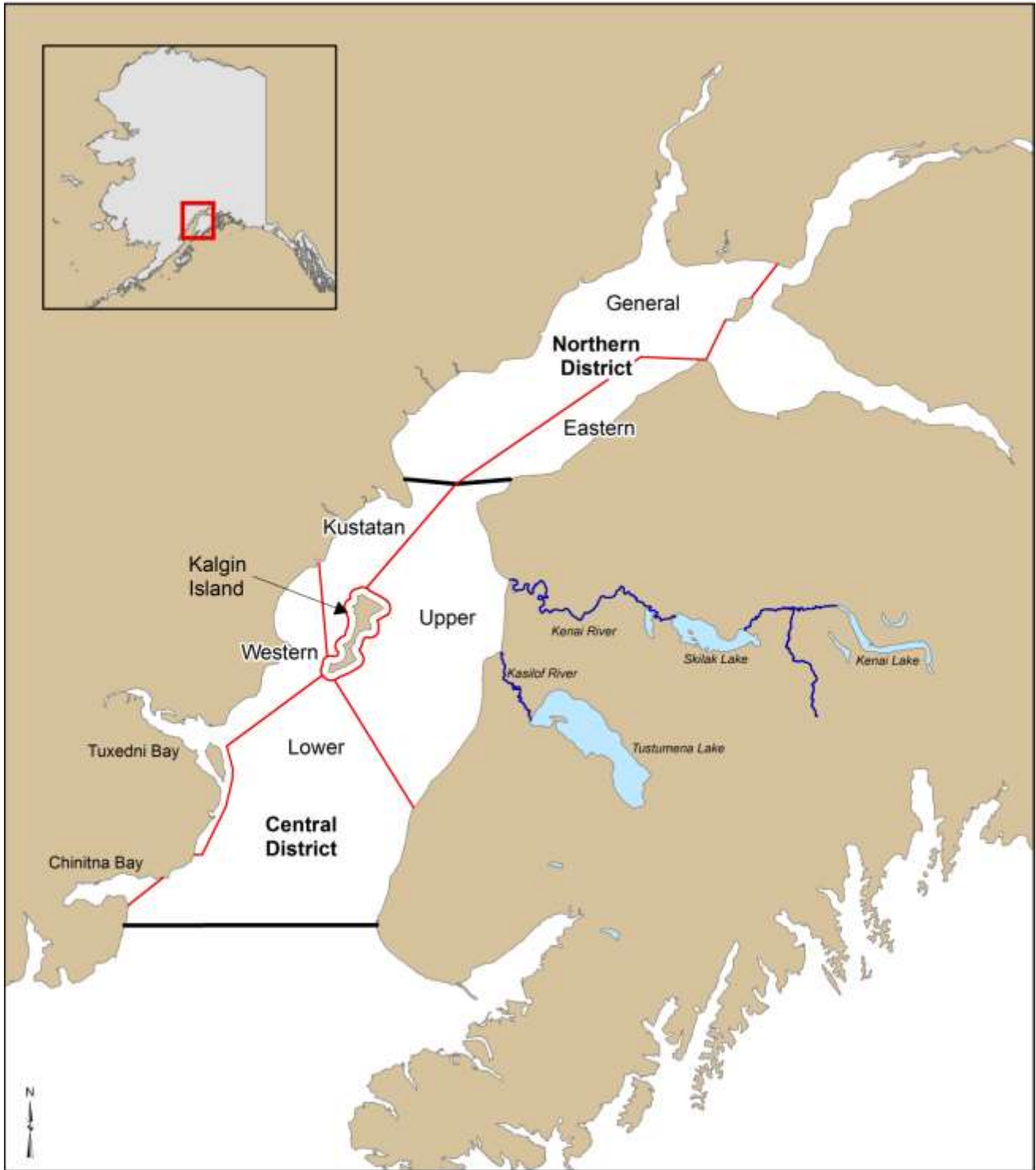


Figure 1.—Upper Cook Inlet commercial fisheries subdistrict fishing boundaries.

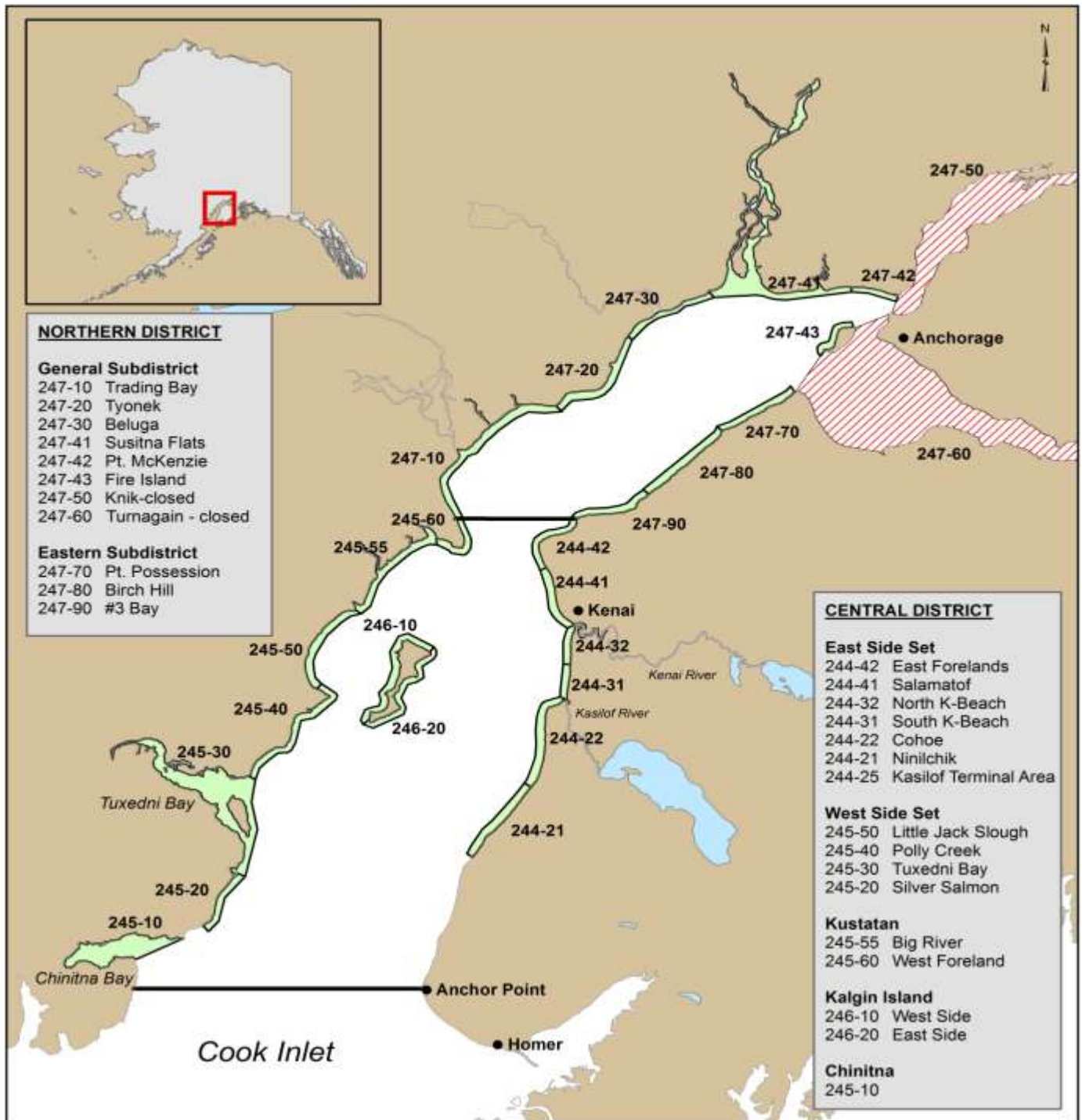


Figure 2.—Upper Cook Inlet commercial set gillnet statistical areas.

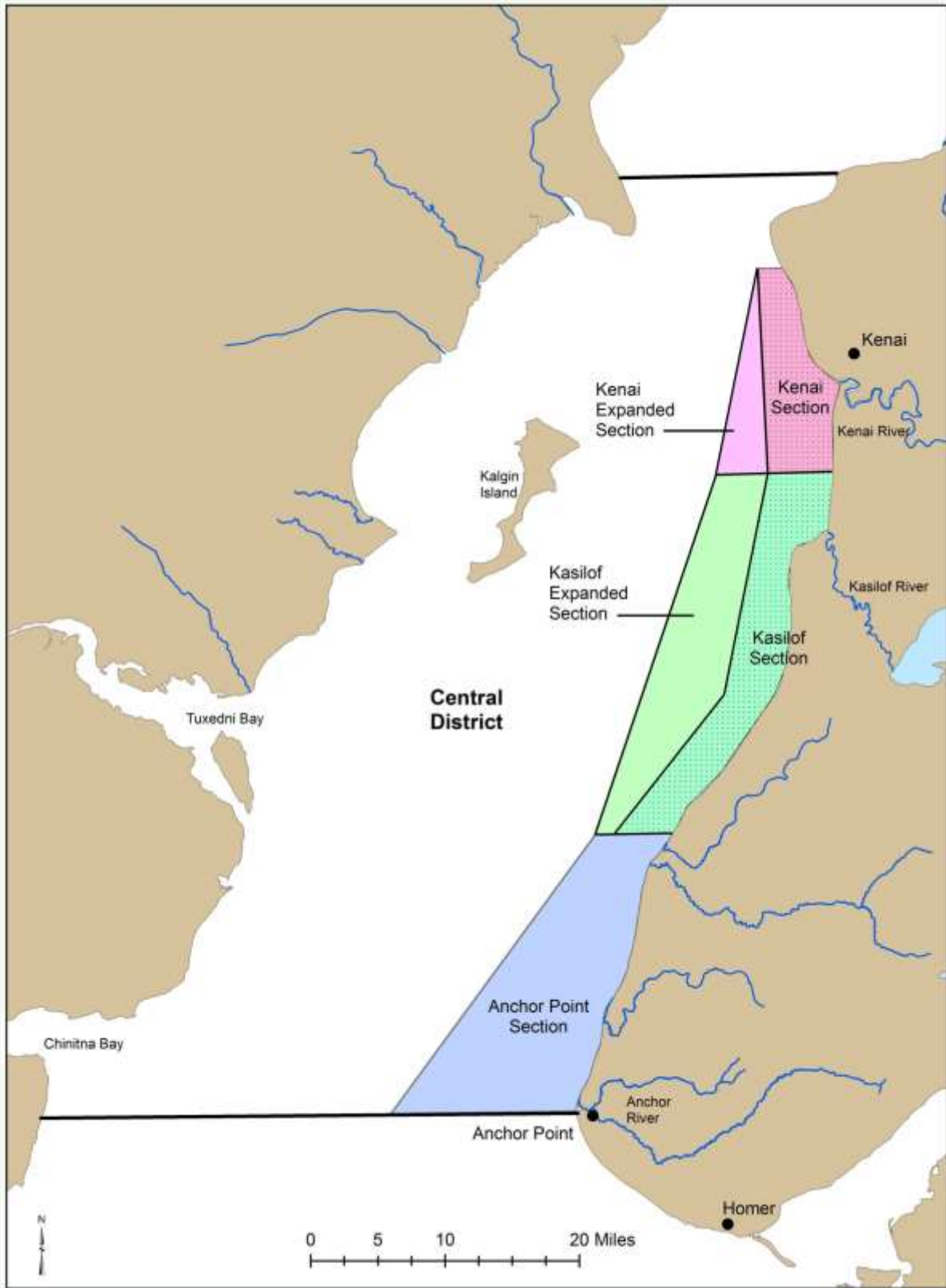


Figure 3.—Map of drift gillnet “corridor” boundaries, including the Kenai and Kasilof sections, Expanded Kenai and Expanded Kasilof sections, and the Anchor Point Section.



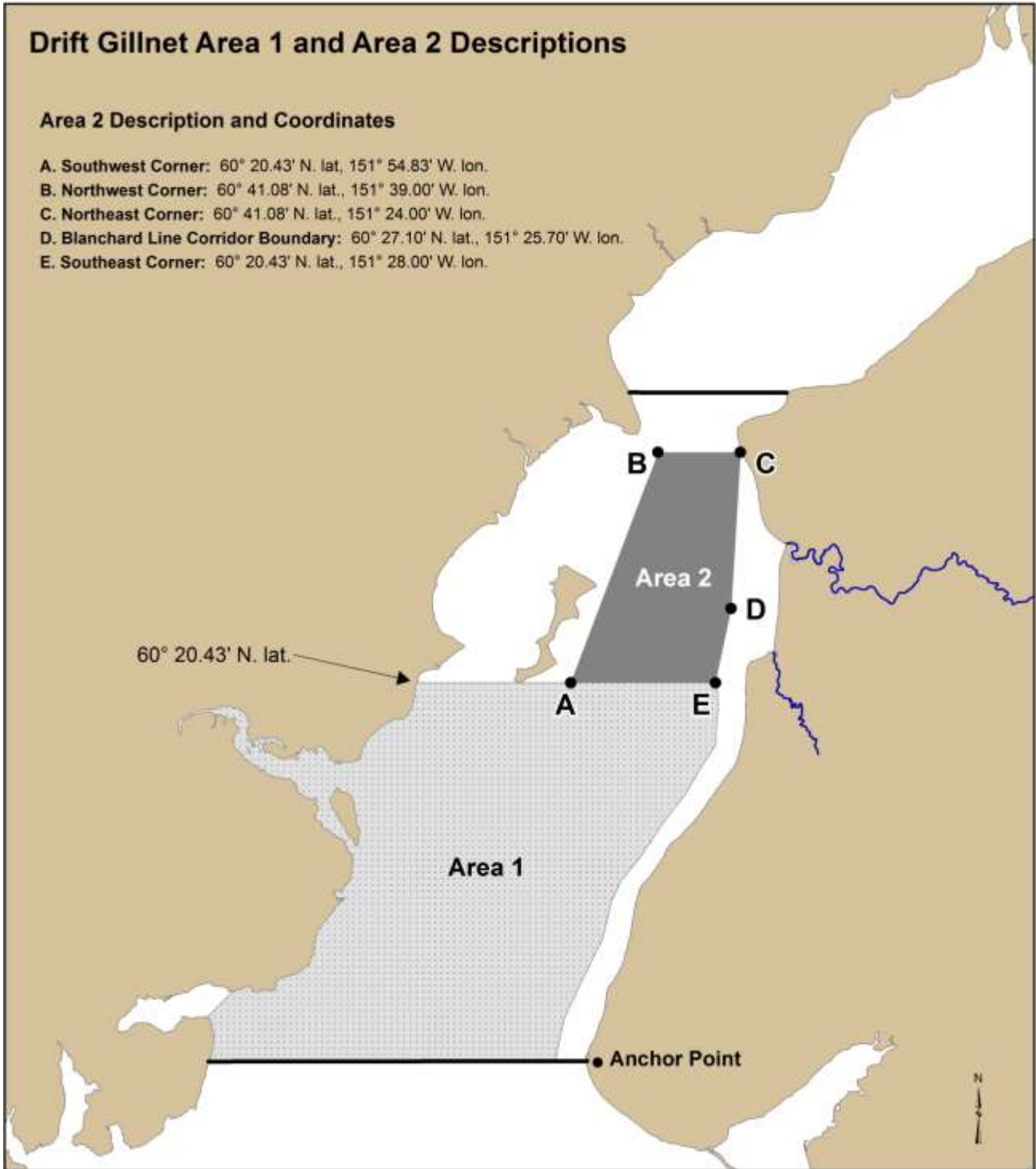


Figure 4.—Drift gillnet boundaries for fishing Areas 1 and 2.

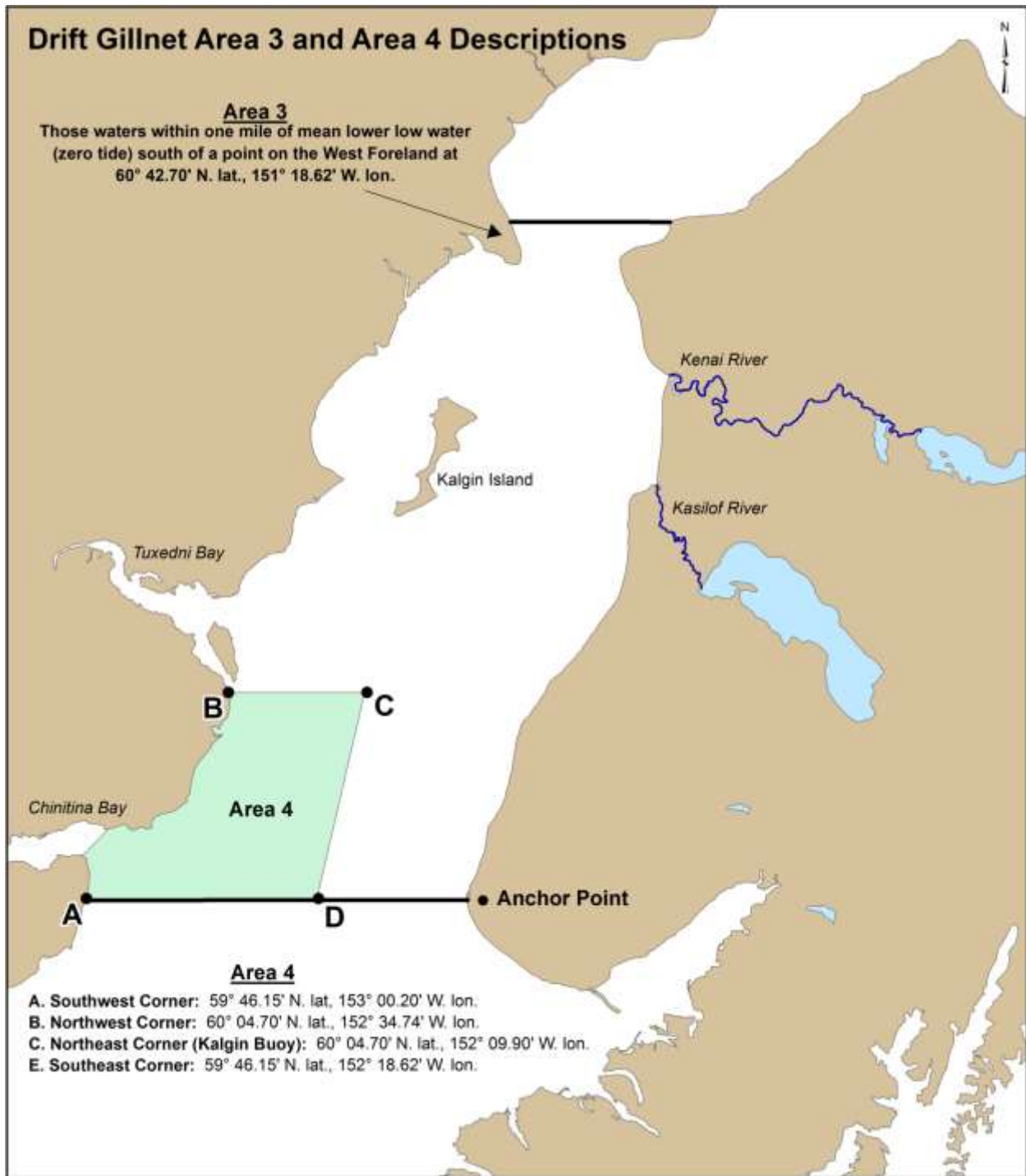


Figure 5.—Map of drift gillnet Areas 3 and 4.



Appendix A1; Preliminary genetic mixed stock analysis results of samples collected in 2018 from Kasilof Section from set net fisheries restricted to within 600 feet from shore.

Table 1.-Upper Subdistrict (Central District) set gillnet fishery Kasilof Section for days restricted to within 600 feet from shore, 2018: Stock composition (%) estimates, including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

Reporting Group	Stock Composition (n = 190)			
	Mean	90% CI		SD
<i>Other CI</i>	4.5	0.6	9.4	2.7
<i>Kenai</i>	27.9	21.0	35.2	4.3
<i>Kasilof</i>	67.6	60.5	74.2	4.2

Reporting Group	Stock Composition (n = 190)			
	Mean	90% CI		SD
<i>Other CI</i>	21.7	13.4	30.4	5.2
<i>Kenai</i>	28.0	20.4	36.0	4.7
<i>Kasilof</i>	50.4	42.7	58.0	4.7

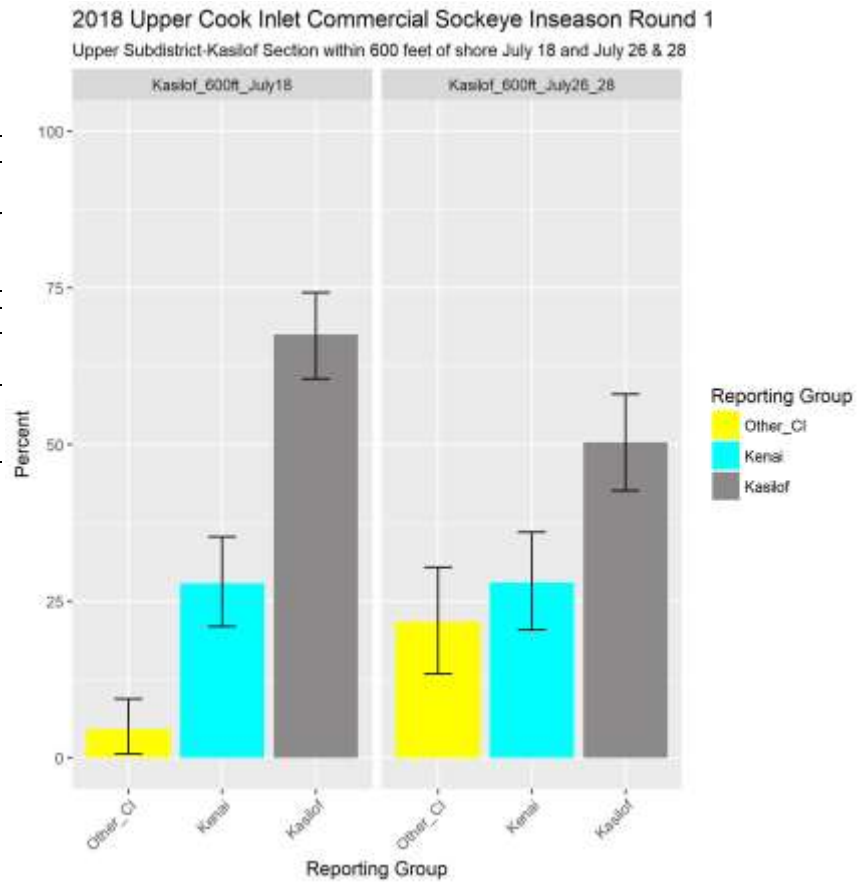


Figure 1.- Upper Subdistrict (Central District) set gillnet fishery Kasilof section for days restricted to within 600 feet from shore, 2018; stock composition estimates and 90% credibility intervals for sockeye salmon.

Appendix A2; Preliminary genetic mixed stock analysis results of sample collected in 2018 from the North Kalifornsky Beach stat area (244-32) of the Kenai Section from set net fisheries restricted to within 600 feet from shore.

Table 1.-Upper Subdistrict (Central District) set gillnet fishery North K. Beach (Kenai Section) for days restricted to within 600 feet from shore, 2018: Stock composition (%) estimates, including mean, 90% credibility interval (CI), sample size (n), and standard deviation (SD).

Reporting Group	Stock Composition (n = 190)			SD
	Mean	90% CI		
<i>Other CI</i>	1.1	0.0	4.1	1.4
<i>Kenai</i>	47.6	38.8	57.3	5.6
<i>Kasilof</i>	51.3	41.7	59.9	5.6

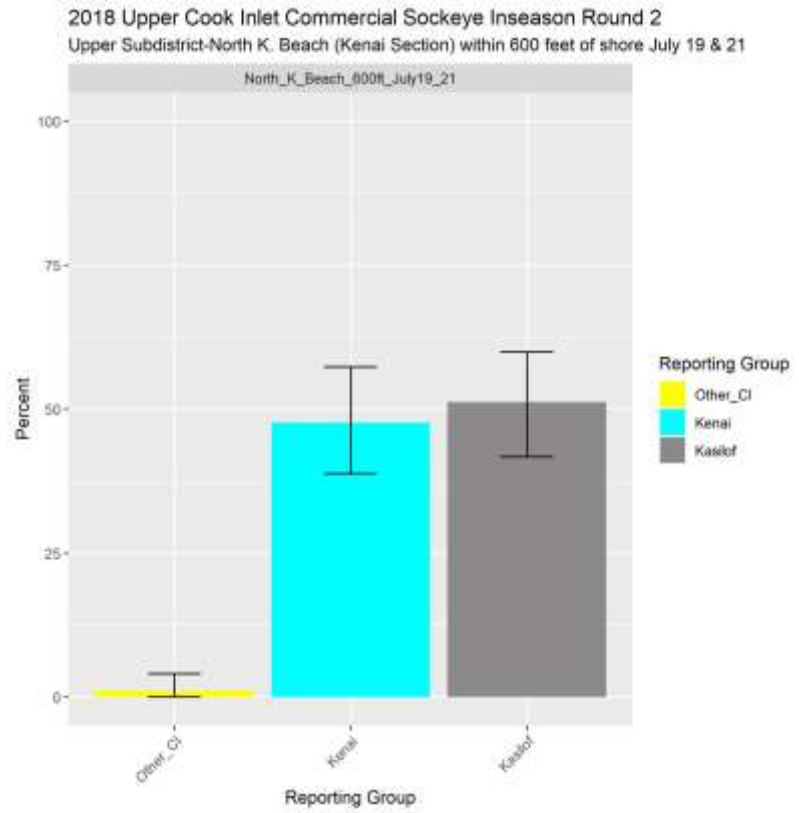


Figure 1.- Upper Subdistrict (Central District) set gillnet fishery North K. Beach (Kenai Section) for days restricted to within 600 feet from shore, 2018; stock composition estimates and 90% credibility intervals for sockeye salmon.