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2020 Bristol Bay Area Annual Management Report

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ABSTRACT

The 2020 Bristol Bay Area Annual Management Report is the 59th consecutive annual report of management activities of the Alaska Department of Fish and Game, Division of Commercial Fisheries staff in Bristol Bay. This report describes the information, decisions, and rationale used to manage the commercial salmon (sockeye *Oncorhynchus nerka*, Chinook *O. tshawytscha*, chum *O. keta*, pink *O. gorbuscha*, and coho *O. kisutch*) and Pacific herring (*Clupea pallasii*) fisheries in Bristol Bay each year. The 2020 inshore sockeye salmon run of 58.3 million fish was 25% above the preseason forecast of 46.6 million fish. Sockeye salmon dominated the inshore commercial harvest, totaling 39.6 million of the 40.1 million salmon commercially harvested. Total Bristol Bay sockeye salmon escapement was 18.7 million fish, and escapements goals were either met or exceeded in all systems with established goals. In total, 10,000 Chinook, 293,000 chum, 72,000 pink, and 114,000 coho salmon were also harvested in the commercial fishery. The Nushagak River Chinook salmon escapement was 43,032 fish, which was below the established escapement goal. This report also summarizes 2020 subsistence salmon fishing activities in the Bristol Bay region. The 2020 Togiak District herring preseason biomass forecast was 216,000 short tons. Total harvest from the commercial herring fishery is confidential because fewer than three processors registered for the fishery in 2020. All 2020 commercial salmon harvest data are based on fish tickets; these data can change if more information becomes available.

Keywords: Pacific salmon *Oncorhynchus* spp., sockeye salmon *Oncorhynchus nerka*, Chinook salmon *O. tshawytscha*, chum salmon *O. keta*, coho salmon *O. kisutch*, pink salmon *O. gorbuscha*, Pacific herring *Clupea pallasii*, commercial fisheries, subsistence fisheries, exvessel value, harvest, Port Moller Test Fishery, genetics, Bristol Bay, Naknek, Kvichak, Egegik, Ugashik, Wood, Nushagak, Igushik, Togiak, Annual Management Report (AMR)

INTRODUCTION

MANAGEMENT AREA DESCRIPTION

The Bristol Bay management area includes all coastal and inland waters east of a line from Cape Newenham to Cape Menshikof (Figure 1). The area includes nine major river systems: Naknek, Kvichak, Alagnak, Egegik, Ugashik, Wood, Nushagak, Igushik, and Togiak. Collectively, these rivers are home to the largest commercial sockeye salmon *Oncorhynchus nerka* fishery in the world. Sockeye salmon are by far the most abundant salmon species that return to Bristol Bay each year, but Chinook *O. tshawytscha*, chum *O. keta*, coho *O. kisutch*, and, in even years, pink salmon *O. gorbuscha* returns are important to the fishery as well. The Bristol Bay area is divided into five management districts (Naknek-Kvichak, Egegik, Ugashik, Nushagak, and Togiak) that correspond to major river systems. The management objective for each river is to achieve salmon escapements within established escapement goal ranges while harvesting fish in excess of those ranges, consistent with regulatory management plans (5 AAC 06.355–5 AAC 06.369).

OVERVIEW OF BRISTOL BAY SALMON FISHERIES

The five species of Pacific salmon found in Bristol Bay are the focus of major commercial, subsistence, and sport fisheries. Management of Bristol Bay salmon is primarily focused on the inshore run of these species. The inshore run is those fish harvested within the designated commercial fishing districts of Bristol Bay and those counted at area escapement projects. Annual commercial harvest for the most recent 20 years (2000–2019) averaged 27.0 million sockeye, 40,200 Chinook, 1.1 million chum, 510,000 pink (even-years only), and 96,400 coho salmon (Appendices A3–A7). Since 2000, the annual exvessel value of the commercial salmon harvest within Bristol Bay has averaged \$147.9 million. Sockeye salmon were the most valuable and averaged \$146.4 million annually (Appendix A24). Subsistence salmon harvests totaled 112,000 salmon in 2020, with 93,000 of those fish being sockeye salmon (Appendices A27–A29). Sport

fisheries harvest all species of salmon, but most effort was directed toward Chinook and coho salmon.

Management of the commercial fishery in Bristol Bay is focused on discrete stocks. Harvests are directed at terminal areas around the mouths of major river systems. Each stock is managed to achieve a spawning escapement goal based on sustained yield. Escapement goals are achieved by regulating fishing time and area by emergency order (EO) and/or adjusting weekly fishing schedules. Legal gear for the commercial salmon fishery includes both drift (150 fathoms) and set (50 fathoms) gillnets. The Alaska Board of Fisheries (BOF) passed a regulation in 2003 that allows two drift permit holders to concurrently fish from the same vessel and jointly operate up to 200 fathoms of drift gillnet gear. Drift gillnet permits are the most numerous and 1,862 are in Bristol Bay (Area T), of which 1,724 were registered to fish in 2020 (Appendix A2). There are a total of 964 set gillnet permits in Bristol Bay, and 841 made at least one delivery in 2020 (Appendix A2).

2020 COMMERCIAL SALMON FISHERY

RUN STRENGTH INDICATORS

Fishery managers in Bristol Bay have several early indicators of sockeye salmon run size. Those include the preseason forecast, the South Alaska Peninsula commercial salmon fishery, an offshore test fishery operating from Port Moller, genetic stock identification, age composition information, individual district test fishery programs, early performance of the commercial fishery, inriver test fishery programs, and timely escapement information from counting towers and a sonar project. These pieces of information may not give a correct assessment of run size individually, but collectively allow broad-scale examination of inseason data. This includes the relative strengths of year classes, discrepancies from the forecast (relative to expected year class contributions), or differences in run timing important to successful management of the commercial fishery.

Due to State of Alaska budget cuts, many of these run assessment projects have not been funded by the state's General Fund since the 2015 fishing season. In 2016, the Bristol Bay Fisheries Collaborative (BBFC) formed as a grassroots stakeholder group to temporarily provide financial support for Bristol Bay commercial fisheries management. Members making financial contributions included fishermen's associations, individual fishermen, 12 different processing companies, five different shipping companies, six different boroughs and villages, and Bristol Bay Native Corporation. In 2020, BBFC provided full or partial funding for the Port Moller Test Fishery, the Ugashik, Egegik, and Kvichak inriver test fisheries, and aerial surveys of the Naknek, Kvichak, and Alagnak drainages. These projects were operated by the Alaska Department of Fish and Game (ADF&G) and the Bristol Bay Science and Research Institute (BBSRI), individually or collaboratively.

2018 ALASKA BOARD OF FISHERIES

The Alaska Board of Fisheries (board) met in Dillingham in November 2018 to review proposals regarding the Bristol Bay Salmon fishery. Actions taken at that meeting resulted in the following regulatory changes for the Bristol Bay fishery:

- A mesh size restriction of 5.5 inches or less was established in the Ugashik and Naknek-Kvichak districts from June 1 through July 22 to help conserve Chinook salmon (called "king salmon" in regulation). The Egegik District already had the same restriction by regulation.

- The late-season fishing schedule for Naknek-Kvichak, Egegik, and Ugashik districts was changed to allow fishing from 9:00 AM Monday to 9:00 AM Sunday, beginning 9:00 AM July 17, or as established by emergency order.
- The Kvichak Section boundary line (north line) was moved slightly north near Graveyard Point to the newly defined coordinate of 58° 52.10' N lat, 157° 00.80' W long.
- The *Alagnak River Sockeye Salmon Special Harvest Area Management Plan* (5 AAC 06.373) was amended to provide opportunity while conserving Kvichak River sockeye salmon. Board actions repealed the connection to the king salmon escapement goal and provided direction to minimize harvest of king salmon.
- The minimum distance between set gillnets in the Wood River Special Harvest Area was increased to 250 feet.
- The definition of districts was clarified to include special harvest areas and further clarified gillnet specifications and operations within special harvest areas.

PRESEASON FORECASTS

Total inshore (excluding harvest in other areas) sockeye salmon production for Bristol Bay in 2020 was forecast to be 46.6 million. The Bristol Bay sockeye salmon inshore harvest was predicted to be 34.6 million fish (Table 1). Runs were expected to be large enough to meet spawning escapement goals for all river systems in Bristol Bay.

The forecast for the sockeye salmon run to Bristol Bay in 2020 was the sum of individual predictions for nine river systems (Kvichak, Alagnak, Naknek, Egegik, Ugashik, Wood, Igushik, Nushagak, and Togiak) and four major age classes (age 1.2, 1.3, 2.2, and 2.3, plus age 0.3 and 1.4 for Nushagak; Table 2). Adult escapement and return data from brood years 1972–2016 were used in the analyses.

Forecasts for each age class returning to a river system were derived from models based on the relationship between adult returns of that age class and either total returns or sibling returns from the same brood years. In general, models with statistically significant parameters and/or the best past performance (accuracy and precision) were chosen. Performance was evaluated using mean absolute deviation, mean absolute percent error, mean arctangent absolute percent error, and mean percent error between forecasted and observed returns. These performance metrics were calculated and considered for each model across the most recent 3-year and 5-year time frames. In certain cases, competing models were averaged in a hybrid model approach. The forecast range is the upper and lower values of the 80% confidence interval for the total run forecast. The confidence bounds were calculated from the deviation of actual runs and run forecasts from 2001 through 2019.

SOUTH UNIMAK/SHUMAGIN ISLANDS FISHERY

From 1975 to 2000, the South Unimak and Shumagin Islands commercial fisheries were managed under a guideline harvest level (GHL), which was based on a percentage of the Bristol Bay inshore sockeye salmon harvest. The original intent was to prevent overharvest of sockeye salmon runs bound for river systems in Bristol Bay. From 1986 to 2000, a chum salmon cap was implemented because of concerns about large chum salmon harvest and a weak Yukon River fall chum salmon run. In 2001, the BOF modified the *South Unimak/Shumagin Islands June Fishery Management Plan* (5 AAC 09.365) to eliminate the sockeye salmon GHL and the chum salmon cap and instead established a June fishing schedule. In 2004, the BOF established a fishing schedule that began at

wind). Therefore, results from genetic sampling are typically available before the fish they represent reach the fishing districts of Bristol Bay (Figure 2).

ECONOMICS AND MARKET PRODUCTION

In 2020, the exvessel value of inshore commercial salmon harvest was an estimated \$141.1 million (Table 3), which was 32% below the \$208.4 million 10-year (2010–2019) average (Appendix A24). The average sockeye salmon price in 2020 was \$0.70/pound before incentives and postseason adjustments. Prices paid for the other salmon species ranged from \$0.05/pound to \$0.70/pound (Table 3).

During the 2020 season, 35 processors/buyers registered to process fish from Bristol Bay. Of those processors, 3 companies canned, 33 froze, 14 exported fresh, 3 cured salmon, and 6 extracted roe. Product was exported by air by 22 companies and exported by sea by 24 companies (Table 4).

RUN AND HARVEST PERFORMANCE BY SPECIES

Sockeye Salmon

The 2020 inshore sockeye salmon run of approximately 58.3 million fish was 25% above the preseason forecast of 46.6 million (Table 1). The sockeye salmon runs to the Wood, Togiak, and Ugashik Rivers came in under forecast, with the remaining river systems coming in above forecast in 2020. Sockeye salmon dominated the inshore commercial harvest, totaling 39.6 million fish, which was the third largest since 2000 and the fifth largest sockeye salmon harvest recorded in Bristol Bay since 1893 (Table 5 and Appendix A3). Sockeye salmon sustainable escapement goals (SEG) were met or exceeded in all systems with established goals (Table 1; Erickson et al. 2018). Two other benchmarks were set in 2020: the sixth highest total inshore salmon harvest (40.0 million) since 1975 and the highest sockeye salmon total run and escapement on record for Naknek River (10.2 million and 4.1 million fish, respectively).

Average sockeye salmon weights in 2020 varied from previous years. Fish that spent three years at sea averaged 5.5 pounds, which is close to historical averages (5.5–6 pounds), whereas fish that spent two years at sea averaged between 4 and 4.5 pounds, roughly a pound less than the historical average. The combined average weight of 5.1 pounds was below the long-term average of 5.8 pounds (Appendix A22).

Chinook Salmon

The 2020 baywide commercial harvest of 10,000 Chinook salmon was the lowest since 1955 (Appendix A4). The Naknek-Kvichak, Egegik, and Togiak district harvests were below the 20-year (2000–2019) average. The Ugashik District harvest was above average. Harvest in the Nushagak District (the largest producer of Chinook salmon in Bristol Bay) was 6,000 fish, which was below the 2000–2019 average of 34,000 fish (Appendix A4). The Nushagak River Chinook salmon escapement was 43,000 fish (Table 6), which was below the SEG of 55,000–120,000 fish and the inriver goal of 95,000 fish.

Chum Salmon

In 2020, the commercial harvest of 293,000 chum salmon was the lowest on record. Chum salmon harvests were below the 2000–2019 averages in all districts (Appendix A5).

Pink Salmon

Bristol Bay has a dominant even-year pink salmon cycle. In 2020, the baywide pink salmon harvest was 72,000 fish, which is well below the 2000–2018 even-year average of 510,000 fish (Appendix A6). The majority of pink salmon harvest was incidental to sockeye salmon directed fisheries.

Coho Salmon

Commercial harvest of coho salmon was 114,000 fish, which was above the 2000–2019 average of 96,000 fish. The largest commercial harvest was in the Nushagak District, where the 76,000 fish harvest was above the 2000–2019 average of 65,000 fish (Appendix A7). The Nushagak River sonar project was operational until July 25 and did not count any coho salmon (Table 6).

SEASON SUMMARY BY DISTRICT

Naknek-Kvichak District

The 2020 inshore run forecast for the Naknek-Kvichak District was 19.0 million sockeye salmon, composed of a projected 6.7 million for escapement and 12.3 million for harvest. The forecast by river system was 9.9 million for the Kvichak River, 3.9 million for the Alagnak River, and 5.2 million for the Naknek River (Table 1). The SEG for Naknek River is a range of 800,000–2.0 million sockeye salmon. The SEG for the Kvichak River is a range of 2.0–10.0 million sockeye salmon. The Alagnak River has a lower bound SEG of 210,000 sockeye salmon. The total inshore run to the district for 2020 was 24.8 million sockeye salmon, consisting of a commercial harvest of 14.3 million and a total escapement of 10.5 million (Table 1).

ADF&G does not forecast Chinook, chum, coho, or pink salmon for systems in Naknek-Kvichak District. Commercial harvest of Chinook salmon has remained relatively small because of a mesh size restriction that prohibits gillnets with a mesh size larger than 5.5 inches from June 1 until July 22 in the Naknek-Kvichak, Egegik, and Ugashik districts. Additionally, the *Naknek-Kvichak District Commercial Set and Drift Gillnet Sockeye Salmon Fisheries Management and Allocation Plan* (5 AAC 06.364(f)) directs the department to open commercial fishing periods for drift gillnets only between the 7-foot flood and 7-foot ebb tide stage for the conservation of Chinook salmon.

Salmon counting towers were operated on the Naknek, Kvichak, and Alagnak rivers during the 2020 season. Fish counts were started at the Naknek River tower on June 19, the Kvichak River tower on June 22, and the Alagnak River tower on June 30 (Table 7). This was the fourth season of operations for the Alagnak River tower since 2011. The Naknek River escapement was 4.1 million, the Kvichak River escapement was 4.0 million, and the Alagnak River escapement was 2.4 million sockeye salmon. Naknek River escapement was above the escapement goal range and the highest on record, Kvichak River escapement was within the escapement goal range, and Alagnak River escapement was above the lower bound escapement goal (Appendix A1).

Additional funding was allocated to tower projects in 2020 to extend the operational dates and establish hard end dates for the projects. This greatly improved overall project operations. Prior to this change, towers generally ceased operation after 3 consecutive days with daily passage that was less than one percent of the total season passage. The established dates for the last day of counting were July 21 for Naknek River tower, July 27 for Kvichak River tower, and July 28 for Alagnak River tower.

Fishing with drift gillnets was restricted to the Naknek Section during the early season schedule, while both sections were open to set gillnets. Fishing periods were from 9:00 AM Monday until

Additional 12-hour fishing periods were provided on July 14 and 15. Harvest from those periods was 206,700 and 316,200 sockeye salmon, respectively, with the latter being the season's peak daily harvest (Table 15). Through July 15, total escapement was approximately 902,000 fish and at current passage rates, the midpoint of the escapement goal (950,000 fish) would be surpassed the following day (Table 16). Fishing continued through the rest of July and an additional 1,427,700 sockeye salmon were harvested. By regulation, the allocation period runs from June 1 to July 17 but approximately 48% of the harvest occurred after July 16 and was not included in the allocation calculation. The last deliveries were recorded August 23 and cumulative catch through that date was 2,598,300 sockeye salmon (Table 15). By the end of the allocation period (July 17), set gillnetters caught approximately 26% of the sockeye salmon harvest and drift gillnetters caught 74%. The allocation specified in regulation is 10% set gillnet and 90% drift gillnet (Appendix A9). Between June 23 and July 17, set gillnet permit holders were provided a total of 140 hours of fishing time, which was 72 hours more fishing time than in 2019, and drift gillnet permit holders were permitted to fish a total of 140 hours, which was 77.5 hours more than in 2019 (Table 15).

The reported harvest of 1,349 Chinook salmon was above the 20-year average (2000–2019) of 974 fish (Appendix A4). Chinook and chum salmon escapements are assessed via aerial surveys in the Dog Salmon and King Salmon Rivers, major tributaries of the Ugashik River and the biggest producers of these species in the district. In 2020, escapement surveys for these species were not flown due to budget constraints. The chum salmon harvest of 16,339 fish was below the 20-year average (2000–2019) of 68,585 fish (Appendix A5). Reported pink salmon harvest was 381 fish and was above the even year average (2000–2019) of 290 fish (Appendix A6). There was limited commercial effort for coho salmon in 2020; reported harvest was 818 fish (Appendix A7). In summary, the 2020 Ugashik District sockeye salmon fishery harvested approximately 60% of the sockeye salmon run to the district, compared to the 20-year (2000–2019) average harvest rate of 70% (Appendix A15). The midpoint of the run was July 15 compared to the 20-year (2000–2019) average of July 11. There were 12 processors registered to purchase fish in the Ugashik District this season (Table 4).

Nushagak District

The 2020 Nushagak District total inshore sockeye salmon run was 12.7 million fish, 5% above the preseason forecast of 12.0 million fish (Table 1). Commercial sockeye salmon harvest in Nushagak District reached 8.9 million fish, 9% below the preseason projected harvest of 9.7 million fish and 13% above the 2000–2019 average harvest of 7.9 million sockeye salmon (Table 1; Appendices A3 and A16). Escapement in the district's three major river systems was 2,243,886 for Wood River, 323,814 for Igushik River, and 1,228,059 sockeye salmon for Nushagak River (Tables 6 and 17). Wood and Nushagak Rivers' sockeye salmon escapements exceeded the upper end of the SEG ranges (Appendix A1). Igushik River's sockeye salmon escapement was within the SEG.

In 2020, there was no forecast for Nushagak District Chinook salmon. The preseason plan for Chinook salmon management was to not expect directed openings for Chinook Salmon; this decision was based on the lower-than-average Chinook salmon runs in recent years and the lack of a reliable forecast for the 2020 season (Appendix A19). As the Chinook salmon run developed it was clear that it was a poor run, and it would not support directed Chinook salmon openings. Additionally, with an above average sockeye salmon forecast and a larger than usual fleet, it was expected that incidental harvest of Chinook salmon would account for any potential surplus. Incidental harvest of Chinook salmon totaled 6,363 fish in the Nushagak District in 2020 (Table 18). This harvest is 18% of the 2000–2019 average harvest of 34,920 fish for the Nushagak

District (Appendix A4). Chinook salmon escapement into Nushagak River was 43,032 fish (Table 6), below the lower end (55,000 fish) of the escapement goal range.

The sonar escapement enumeration project at Portage Creek was fully operational on June 6 (Table 6). Nushagak Chinook salmon escapement was weak all season and never projected to meet the lower end of the escapement goal range, which was 55,000 fish. The cumulative escapement through June 18 was 8,545 (Table 6), which projected out to a total escapement of approximately 54,016. The preseason plan, outlined in the outlook (Appendix C1), indicated commercial fishing for sockeye salmon would begin in the Nushagak District when Wood River escapement reached 100,000 sockeye salmon if Nushagak Chinook escapement was projecting below 95,000 fish. Management emphasis would also switch from Chinook salmon to sockeye salmon at this point. With Nushagak Chinook salmon escapement projecting below the minimum escapement, the management strategy was to wait as long as possible before opening commercial fishing in the district while still protecting against a big influx of sockeye salmon. Staff closely watched Wood River sockeye salmon escapement, where enumeration began on June 17, for signs of such an influx. Wood River sockeye salmon escapement remained low relative to the previous three years and only 58,890 fish had passed the tower through June 23 (Table 17). On June 24, escapement past the tower seemed to be increasing. Staff flew an aerial survey in the morning and did not see substantial numbers of fish in the upper river. However, subsistence reports indicated that there were some sockeye salmon moving into the lower end of the Wood River. Staff flew another survey on the evening of June 24, and under very poor conditions saw a significant increase in the number of fish in the river relative to the morning survey. With what seemed to be a strong push of sockeye salmon in the Wood River based on the aerial survey, staff announced openings for the set and drift gillnet fleets for the morning of June 25 (Table 19).

The sockeye salmon escapement on the Wood River for June 24 was 67,884 fish, bringing the cumulative escapement to 126,774 fish (Table 17). The sockeye salmon harvest on June 25 was 168,000 fish (Table 18). This was a suitable harvest for the first opening of the year, but smaller than expected considering the daily escapement in the Wood River. Harvest stayed at a relatively low level for the next several days and fishing opportunity was limited to short, 4- to 6-hour openings for the drift fleet alternating between one and two tides a day, but not fishing more than 11 hours in a day until July 6.

Sockeye salmon harvest and escapement between June 25 and July 5 were unexceptional. The peak Wood River sockeye salmon escapement during this time was on June 26 at 50,562 fish (Table 17). The peak harvest was June 29, when 254,213 sockeye salmon were harvested. Harvest and escapement dropped after the peaks and the harvest hit a low of 39,611 sockeye salmon on July 2 (Table 18). The Wood River sockeye salmon escapement was at the low of 12,498 fish on July 5 (Table 17). These low harvest and escapement numbers convinced some in the fleet that the run was over or smaller than expected and there was a substantial outmigration of fleet to other districts where harvest was increasing.

On June 26, there were 703 drift gillnet permits registered to fish in the Nushagak District on 532 vessels. On July 4 there were 525 drift gillnet permits on 417 vessels. On July 5, fish arrived and harvest was 982,648 sockeye salmon. There were some processing capacity issues that developed relatively quickly. The harvest in the eastside districts was also strong which made it difficult for some processors to keep up with processing. The harvest on July 6 was 1,029,953 sockeye salmon. This was the peak harvest day for the season and in the five days from July 5 to July 9, 4.2 million

sockeye salmon were harvested in the Nushagak District (Table 18). This was 47% of the total sockeye salmon harvest for the season.

Sockeye salmon escapement also increased after July 5. The Wood River sockeye salmon escapement jumped from the daily low on July 5 to a high on July 9. The July 9 escapement was 270,660 fish bringing the cumulative escapement to 1.2 million (Table 17). Because the Wood River had exceeded the 1.1 million mark and was now projected to exceed 1.4 million, it was appropriate to open the Wood River Special Harvest Area (WRSHA). As per regulation, the gear type that is behind relative to the allocation plan is afforded the extra opportunity to harvest fish in the WRSHA. In 2020, the drift gillnet fleet was behind, so the WRSHA opened to drift gillnet gear on July 10. Through July 9, the harvest percentage for the drift gillnet fleet was 73.2% relative to the allocation plan goal of 74%. At this point, there were only 423 drift gillnet permits on 343 vessels registered to fish in the Nushagak District and the number was continuing to drop. The gap between harvest percentage and allocation continued to widen as the drift gillnet fleet fell further behind. The WRSHA was open at first on a tide-by-tide basis, then on July 12 it was extended for 25 hours at a time and remained open until noon on July 19 (Table 19).

Commercial fishing with set gillnets in the Nushagak Section also began on June 25. As with the drift openings, management was conservative for the set gillnet fleet. Staff tried to balance allowing breaks in fishing to allow Chinook salmon to pass through the district and at the same time consider the need to guard against a large influx of sockeye salmon that the forecast and PMTF indicated were coming. Set gillnet openings started at 12 hours a day for the first three days but then concerns of a storm blowing through and possibly pushing fish with it resulted in staff extending openings for two days on June 27.

With harvest lower than expected and escapement under control, staff continued to open and close the set gillnet fishery, trying to provide opportunity and allow for breaks in fishing to let Chinook salmon pass. On July 1, the set gillnet fishery was extended for 25 hours and then extended again on July 2 for 18.5 hours. At this point, staff were receiving reports of large volumes of fish outside the district and were prepared for when the fish decided to move into the district. Fishing opened for a 19-hour period between July 3 and 4 and was then extended twice more before being extended until further notice on July 6.

Igushik set gillnet fishing opened on June 15 for eight hours a day (Tables 18 and 19). This schedule was maintained until June 25 when the fishing schedule was aligned to mirror the Nushagak Section set gillnet fishing schedule. Sockeye salmon escapement was slower than expected in the Igushik River in 2020. The Igushik Section was closed to drift gillnet fishing between July 11 and July 14 to allow additional escapement into the Igushik River. Staff did consider restricting the set gillnet fishery in Igushik, but sockeye salmon escapement into the river surged starting July 10 and by July 14 was over the 150,000-lower end of the escapement goal range. At that time, the Igushik Section was reopened to drift gillnet fishing until further notice.

As the sockeye salmon run ended, fishing effort dropped steadily, and processing effort also diminished. With decreased fishing effort and reduced processing capacity, the department transitioned from sockeye salmon management to coho salmon management. In 2020, the sonar counting station was operational on the Nushagak River until July 25. This meant that sonar counts were not available for management of the coho salmon fishery. With no escapement information for pink or coho salmon, staff used harvest information to determine if fishing was warranted.

Fishing remained open continuously in the Nushagak District for both drift and set gillnets, but effort was minimal and peaked at 38 deliveries on August 11 (Table 18). Without sonar counts, the pink and coho salmon runs were not quantified in 2020. Coho salmon harvest of 76,133 fish, was fair, being above the 20-year (2000–2019) average but below the 10-year (2010–2019) average (Appendix A7). The total Nushagak District pink salmon harvest was 26,216 fish, which is below the 20-year (2000–2019) average of 425,620 fish (Tables 5 and 18; Appendix A6). The final chum salmon harvest was 136,605 fish (Tables 5 and 18; Appendix A5). The final sockeye salmon harvest was 8,860,302 fish (Tables 5 and 18; Appendix A3).

Togiak District

The 2020 inshore run forecast for the Togiak River was 880,000 sockeye salmon, composed of a projected 200,000 fish escapement and 690,000 fish harvest (Table 1). Smaller sockeye salmon runs to other drainages in the district (primarily the Kulukak River) occur, but these are not included in the preseason forecast; however, they contribute approximately 50,000 sockeye salmon to the district harvest each year. The SEG for the Togiak River is 120,000–270,000 sockeye salmon. The total inshore run to the district in 2020 was 706,698 sockeye salmon, which is below the 20-year average (Table 1; Appendix A18). The commercial harvest of 445,572 sockeye salmon was also below average (Table 20; Appendices A3 and A18).

The Togiak District is managed differently than other districts in Bristol Bay. This district uses a fixed fishing schedule of 60 hours per week in Kulukak Section; four days per week in Togiak River Section (except for a peak fishing schedule of 5.5 days per week from July 1 to July 15); and five days per week in Osviak, Matogak, and Cape Peirce Sections. In addition, transferring into Togiak District prior to July 27 is prohibited by regulation if the permit and or vessel had been registered in any of the four other Bristol Bay districts. Conversely, permit holders that have fished in the Togiak District are prohibited from fishing in any other Bristol Bay district until July 27.

ADF&G does not forecast Chinook salmon for systems in the Togiak District. However, based on recent harvests, the Chinook salmon run was again anticipated to be below average. As a result, the department managed the early portion of the season conservatively and monitored effort and Chinook salmon harvest closely through June. Effort remained low throughout much of June and the department took no management actions to restrict fishing time until effort increased the week of June 24, when the Togiak River Section opening was reduced by 24 hours (Table 19). Total Chinook salmon harvest for the Togiak District was 767 fish, which is below the 10-year (3,595 fish) and 20-year (5,291 fish) averages (Table 20; Appendix A20).

The escapement counting tower on the Togiak River began counting on July 4. Escapement counts were low until July 16, when they increased to normal levels. It was not until July 16 that escapement projected to be above the 120,000-minimum escapement goal. However, Togiak has been experiencing later run timing in recent years, so although staff did not extend fishing time beyond what is called for in the management plan, fishing time was not reduced except in June for the conservation of Chinook salmon. After July 16, escapement continued at an above average pace and spiked between July 27 and July 31 when over 70,000 sockeye salmon were counted (Table 17). July 29 was the peak escapement date for the year with 20,910 sockeye salmon counted past the tower. This strong escapement prompted increased fishing time with a 24-hour extension on July 24 and the maximum allowable 48-hour extensions on July 31, August 7, and August 14 (Table 19). Tower operations ended on August 9 with a daily count of 5,136 sockeye salmon.

Table 2.—Forecast of total sockeye salmon returns by age class, river system and district, in thousands of fish, Bristol Bay, 2020.

District and river system	Ocean-age-2			Ocean-age-3			Total	Total
	1.2 (2016)	2.2 (2015)	Total	1.3 (2015)	2.3 (2014)	Total		
Naknek-Kvichak District								
Kvichak River	5,070	2,230	7,300	3,040	70	3,110	10,410	
Alagnak River	1,940	480	2,420	1,610	60	1,670	4,090	
Naknek River	780	170	950	4,190	330	4,520	5,470	
Total	7,790	2,880	10,670	8,840	460	9,300	19,970	
Egegik District								
Egegik District	1,880	3,130	5,010	4,660	1,080	5,740	10,750	
Ugashik District								
Ugashik District	2,310	870	3,180	1,460	40	1,500	4,680	
Nushagak District								
Wood River	5,810	140	5,950	2,680	40	2,720	8,670	
Igushik River	370	0	370	680	10	690	1,060	
Nushagak River ^a	670	30	700	2,120	60	2,180	2,880	
Total	6,850	170	7,020	5,480	110	5,590	12,610	
Togiak District ^b								
Togiak District ^b	300	10	310	610	10	620	930	
Total Bristol Bay ^{c, d}								
Number	19,140	7,060	26,200	21,040	1,680	22,720	48,920	
Percent	39%	14%	54%	43%	3%	46%	100%	

^a Nushagak River forecast total includes minor contributions from age-0.3 and age-1.4 fish.

^b Several smaller river systems not forecast. These systems contribute approximately 50,000 sockeye salmon to Togiak District harvest each year.

^c Sockeye salmon of several minor age classes are expected to contribute an additional 1-2% to the total return.

^d Total may not equal sum of all districts due to rounding.

Table 3.—Mean round weight, price per pound, and total exvessel value of the commercial salmon catch by species, Bristol Bay, 2020.

Species	Total catch (lb)	Mean weight (lb)	Mean price (\$/lb)	Exvessel value (\$)
Sockeye	200,204,234	5.1	0.70	140,142,964
Chinook	96,415	9.6	0.50	48,208
Chum	1,770,555	6.0	0.25	442,639
Pink	235,045	3.3	0.05	11,752
Coho	624,064	5.5	0.70	436,845
Total	202,930,313			141,082,407

Table 4.—Commercial salmon processors and buyers operating in Bristol Bay, 2020.

	Name of operator/buyer	Base of operations	District ^a	Method ^b	Export
1	Alaska's Best Seafood, LLC	Dillingham, AK	N	EF, F, RE	AIR, SEA
2	Alaska General Seafoods	Kenmore, WA	K,E,N	C,EF,F,RE	AIR,SEA
3	Anthony Wood	King Salmon, AK	K	EF, F	AIR, SEA
4	Big Creek Fisheries	Everett, WA	E,U	EF, F	AIR,SEA
5	Cape Greig	Seattle, WA	U	F	SEA
6	Coffee Point Seafoods	Seattle, WA	E	EF,F,RE	AIR,SEA
7	Copper River Seafoods	Anchorage, AK	E,K,N,T,U	EF,F,RE	AIR,SEA
8	Diamond O Fish House	Wasilla, AK	K	F,S	AIR
9	Ekuk Fisheries LLC.	Seattle, WA	N	F	SEA
10	High Tide Fisheries	Naknek, AK	K	F,S	SEA
11	Kevin Cossart	Bonnars Ferry, ID	K	F	AIR
12	Icicle Seafoods (OBI)	Seattle, WA	E,K,N,U	C,EF,F,RE	AIR,SEA
13	Just Wild Salmon	College Place, WA	N	F	SEA
14	Leader Creek Fisheries	Seattle, WA	E,K,N,U	F	SEA
15	Madison's Salmon Co.	Anchorage, AK	K	F	AIR
16	Nakeen Homepack	King Salmon, AK	K	F	SEA
17	North Pacific Seafoods (Togiak Fisheries)	Seattle, WA	T	F	SEA
18	North Pacific Seafoods (Red Salmon Cannery)	Seattle, WA	E,K,N,U	F,EF	SEA
19	North Pacific Seafoods (Pederson Point)	Seattle, WA	K	F	SEA
20	Ocean Beauty Seafoods (OBI)	Seattle, WA	E,K,N,U	EF,F,RE	AIR,SEA
21	Pearl Bay Seafoods	Homer, AK	E,N,T	F	SEA
22	Peter Pan Seafoods	Seattle, WA	E,K,N,T,U	EF,F,RE,S	AIR,SEA
23	Small Boat Salmon	Anchorage, AK	N	EF	AIR
24	Silver Bay Seafoods	Seattle, WA	E,K,N,U	F	AIR,SEA
25	Sunrise Salmon	Fergus Falls, MN	K	F	AIR
26	Terpening Fishing LLC	Homer, AK	U	F	AIR
27	Trident Seafoods	Seattle, WA	E,K,N,U	C,F,EF	AIR,SEA
28	Tulchina Fisheries	Naknek, AK	K	EF, F	AIR
29	Two If By Seafoods	Issaquah, WA	K	F	AIR
30	Ugashik Wild Salmon Company	Anchorage, AK	U	F	AIR
31	F/V King Louie Victor Popa	Fallbrook, CA	E	F	SEA
32	Wild Alaska Salmon and Seafood	King Salmon, AK	K	EF, F	AIR,SEA
33	Wild Bay Seafood Co.	Gig Harbor, WA	K	F	SEA
34	Wild Legacy Seafoods	Homer, AK	N	EF	AIR
35	Willbros Salmo Co.	Ruidoso, NM	K	F	AIR
36	Wilson's Wild Salmon	Naknek, AK	K	F	SEA

^a E = Egegik; K = Naknek-Kvichak; N = Nushagak; T = Togiak; U = Ugashik.

^b Type of processing: C = canned; EF = export fresh; F = frozen; RE = roe extraction; S = cured.

Table 5.—Commercial salmon catch by district, river, and species, in numbers of fish, Bristol Bay, 2020.

District and river system	Sockeye	Chinook	Chum	Pink	Coho	Total
Naknek-Kvichak District						
Kvichak River	5,967,076					5,967,076
Alagnak River	2,217,805					2,217,805
Naknek River	6,126,153					6,126,153
Total	14,311,034	816	36,381	1,345	1,033	14,350,609
Egegik District	13,364,669	711	50,055	1,755	26,342	13,443,532
Ugashik District	2,598,269	1,349	16,339	381	818	2,617,156
Nushagak District						
Wood River	5,641,358					5,641,358
Igushik River	871,200					871,200
Nushagak River	2,347,744					2,347,744
Total	8,860,302	6,363	136,605	26,216	76,133	9,105,619
Togiak District	445,572	767	53,510	42,216	10,095	552,160
Total Bristol Bay	Total 39,579,846	10,006	292,890	71,913	114,421	40,069,076

Note: Species other than sockeye salmon are not apportioned to individual rivers.

Table 10.–Daily district registration of drift gillnet permit holders and dual vessel registration, by district, Bristol Bay, 2020.

Date	Naknek-Kvichak		Egegik		Ugashik		Nushagak		Togiak		Total ^b
	Total	Dual	Total	Dual	Total	Dual	Total	Dual	Total ^a		
6/1	0	0	3	0	0	0	1	0	0	4	
6/2	5	1	17	1	1	0	12	4	1	36	
6/3	5	1	18	1	1	0	14	5	1	41	
6/4	5	1	18	1	2	0	15	5	3	44	
6/5	5	1	20	1	2	0	15	5	4	46	
6/6	5	1	20	1	2	0	15	5	4	46	
6/7	5	1	21	1	2	0	15	5	4	47	
6/8	5	1	23	1	2	0	15	5	4	50	
6/9	11	1	34	3	7	0	27	5	5	85	
6/10	11	1	37	3	7	0	33	5	6	100	
6/11	12	1	43	4	7	0	35	5	12	111	
6/12	12	1	46	5	7	0	37	5	14	116	
6/13	14	1	50	6	8	1	42	6	14	128	
6/14	25	1	74	7	8	1	42	6	14	163	
6/15	25	1	102	15	8	1	46	8	14	196	
6/16	35	1	136	26	12	3	65	11	15	265	
6/17	39	1	146	27	12	3	78	11	17	294	
6/18	40	1	147	27	12	3	96	14	19	315	
6/19	57	1	177	33	8	1	112	17	20	378	
6/20	61	1	196	39	8	1	152	26	24	442	
6/21	67	1	223	43	8	1	175	30	25	499	
6/22	80	6	266	55	8	1	201	33	26	585	
6/23	112	14	277	54	8	1	270	45	30	698	
6/24	131	15	271	53	8	1	335	57	31	776	
6/25	181	24	300	60	14	3	528	110	31	1,054	
6/26	270	48	329	67	25	7	697	168	31	1,354	
6/27	350	74	393	88	29	9	682	160	33	1,488	
6/28	389	85	408	92	30	9	675	159	34	1,537	
6/29	434	99	410	92	31	9	677	160	35	1,588	
6/30	459	103	431	96	29	8	676	160	36	1,632	
7/01	466	104	440	100	30	8	662	156	37	1,635	
7/02	473	105	446	101	34	8	636	145	37	1,626	
7/03	495	114	450	102	37	9	589	128	37	1,608	
7/04	511	120	462	107	42	10	540	110	37	1,592	
7/05	518	120	500	121	47	10	479	101	37	1,581	
7/06	531	123	529	134	48	10	478	101	37	1,625	
7/07	544	126	573	140	48	10	488	105	39	1,692	
7/08	548	126	570	141	50	10	484	102	39	1,694	
7/09	550	126	567	141	44	7	466	96	42	1,670	
7/10	558	129	556	136	46	7	437	86	43	1,640	
7/11	589	139	516	124	48	7	360	62	43	1,557	
7/12	616	148	471	115	61	13	299	53	44	1,491	
7/13	696	172	482	115	91	23	294	52	44	1,607	
7/14	715	175	483	115	144	34	282	47	44	1,668	
7/15	722	177	480	116	158	37	282	47	44	1,686	
7/16	722	176	474	114	174	40	279	46	44	1,684	
Average ^c	386	86	391	89	43	10	402	84	35	1,257	

Note: Total permit sum includes dual boat registrations.

^a Dual boat registration is not permitted by regulation in Togiak District.

^b Total does not include permits in transfer status.

^c Seasonal averages calculated for June 16–July 16.

Table 18.—Commercial salmon catch by date and species, in numbers of fish, Nushagak District, Bristol Bay, 2020.

Date	Hours fished (drift/set)		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total	
	Nushagak	Igushik	Drift	Set							
6/15	a	0/0	0/8								
6/16	a	0/0	0/8								
6/17	a	0/0	0/8								
6/18	a	0/0	0/8								
6/19	a	0/0	0/8								
6/20	a	0/0	0/8								
6/21	a	0/0	0/8								
6/22	a	0/0	0/8								
6/23	a	0/0	0/8								
6/24	a	0/0	0/8								
6/25		5/12	5/12	497	304	167,742	1315	14,679	1	6	183,743
6/26		5/12	5/12	449	203	140,966	624	7,441	1	0	149,032
6/27		9/19	9/19	637	305	196,175	632	6,470	0	0	203,277
6/28		8.5/24	8.5/24	612	319	244,252	481	5,940	0	0	250,673
6/29		5.5/19	5.5/19	419	227	254,213	252	5,061	1	0	259,527
6/30		5.5/12	5.5/12	455	284	193,698	231	4,209	0	0	198,138
7/1		6.5/15	6.5/15	515	314	106,081	256	3,214	3	0	109,554
7/2		10/24	10/24	382	238	39,611	245	2,334	2	0	42,192
7/3		4.5/17	4.5/17	390	259	66,524	259	3,502	0	0	70,285
7/4		7.5/24	7.5/24	334	230	196,931	277	4,778	3	0	201,989
7/5		11/24	4/24	580	436	982,648	397	11,085	0	0	994,130
7/6		14/24	7/24	629	648	1,029,953	249	7,641	0	0	1,037,843
7/7		13.5/24	8/24	573	619	927,155	128	7,478	0	0	934,761
7/8		24/24	22/24	512	343	705,171	61	7,443	1	0	712,676
7/9		22/24	14/24	432	483	549,810	78	5,314	2	0	555,204
7/10		14/24	1/24	594	481	495,614	91	6,419	2	0	502,126
7/11		13.5/24	11/24	370	472	505,812	100	5,320	5	0	511,237
7/12		15.5/24	24/24	328	539	440,471	98	5,650	5	2	446,226
7/13		24/24	24/24	309	443	272,887	96	3,468	9	3	276,463
7/14		24/24	24/24	332	360	273,837	74	3,336	15	13	277,275
7/15		24/24	24/24	335	356	274,177	54	3,193	15	20	277,459
7/16		24/24	24/24	263	377	185,537	61	2,239	10	41	187,888
7/17		24/24	24/24	245	270	126,743	45	1,741	58	69	128,656
7/18		24/24	24/24	230	269	146,944	28	2,734	58	98	149,862
7/19		24/24	24/24	122	271	65,776	44	1,166	71	169	67,226
7/20		24/24	24/24	72	218	46,025	16	995	64	147	47,247
7/21		24/24	24/24	63	177	58,186	17	956	130	223	59,512
7/22		24/24	24/24	38	159	36,965	18	603	230	506	38,322
7/23		24/24	24/24	38	149	38,506	15	491	717	318	40,047

-continued-

Table 18.—Page 2 of 2.

Date	Hours fished (drift/set)		Deliveries		Sockeye	Chinook	Chum	Pink	Coho	Total
	Nushagak	Igushik	Drift	Set						
7/24	24/24	24/24	15	90	10,877	12	191	151	944	12,175
7/25	24/24	24/24	20	88	16,442	6	177	490	384	17,499
7/26	24/24	24/24	9	61	6,199	4	109	492	310	7,114
7/27	24/24	24/24	21	50	6,878	6	169	1,005	1,142	9,200
7/28	24/24	24/24	15	46	4,020	11	105	1,210	1,253	6,599
7/29	24/24	24/24	8	4	2,191	2	31	312	280	2,816
7/31 ^a	24/24	24/24								
8/1 ^a	24/24	24/24								
8/2	24/24	24/24	10	8	988	2	42	2,183	914	4,129
8/3	24/24	24/24	13	11	1,612	2	52	2,902	2,146	6,714
8/4	24/24	24/24	18	3	581	1	35	2,351	2,456	5,424
8/5	24/24	24/24	10	6	503	2	28	1,419	1,931	3,883
8/6	24/24	24/24	21	3	727	3	33	1,929	3,063	5,755
8/7	24/24	24/24	11	5	456	0	8	648	1,577	2,689
8/8	24/24	24/24	18	0	231	0	31	624	3,528	4,414
8/9	24/24	24/24	18	2	207	0	23	822	1,676	2,728
8/10	24/24	24/24	32	4	751	1	46	1,341	4,728	6,867
8/11	24/24	24/24	29	9	728	1	24	1,706	3,808	6,267
8/12	24/24	24/24	18	9	583	0	28	1,825	2,202	4,638
8/13	24/24	24/24	23	12	620	2	23	1,070	5,873	7,588
8/14	24/24	24/24	12	9	219	0	16	472	4,956	5,663
8/15	24/24	24/24	18	9	319	0	10	373	5,968	6,670
8/16	24/24	24/24	14	7	339	1	9	243	3,397	3,989
8/17	24/24	24/24	12	5	195	0	6	219	3,867	4,287
8/18	24/24	24/24	17	3	466	0	12	220	4,890	5,588
8/19	24/24	24/24	11	6	183	0	5	149	3,537	3,874
8/20	24/24	24/24	12	7	184	0	9	278	3,681	4,152
8/21 ^a	24/24	24/24								
8/22 ^a	24/24	24/24								
8/23 ^a	24/24	24/24								
8/27 ^a	24/24	24/24								
8/30 ^a	24/24	24/24								
8/31 ^a	24/24	24/24								
9/1 ^a	24/24	24/24								
9/5 ^a	24/24	24/24								
9/9 ^a	24/24	24/24								
9/13 ^a	24/24	24/24								
Total	1346.5/1520	1310/1602	11,177	10,435	8,860,302	6,363	136,605	26,216	76,133	9,105,619

^a Fewer than 4 permit holders or companies operated; harvest confidential.

Table 19.—Commercial fishing emergency orders, by district and statistical area, Bristol Bay westside, 2020.

Number ^a	Start date	Start time		End date	End time	Effective time
Nushagak District						
Nushagak Section						
Drift gillnet						
DLG.04	6/17	10:00 AM	to			b
DLG.10	6/25	10:00 AM	to	6/25	3:00 PM	5.0 hours
DLG.11	6/26	7:00 AM	to	6/26	12:00 PM	5.0 hours
DLG.12	6/27	7:30 AM	to	6/27	12:30 PM	5.0 hours
DLG.13	6/27	7:30 PM	to	6/27	11:30 PM	4.0 hours
DLG.13	6/28	8:00 AM	to	6/28	1:00 PM	5.0 hours
DLG.14	6/28	8:30 PM	to	6/29	12:30 AM	4.0 hours
DLG.14	6/29	9:00 AM	to	6/29	2:00 PM	5.0 hours
DLG.15	6/30	10:00 AM	to	6/30	3:30 PM	5.5 hours
DLG.16	7/1	10:30 AM	to	7/1	4:30 PM	6 hours
DLG.17	7/1	11:30 PM	to	7/2	4:30 AM	5 hours
DLG.17	7/2	11:00 AM	to	7/2	4:30 PM	5.5 hours
DLG.19	7/3	12:00 PM	to	7/3	4:30 PM	4.5 hours
DLG.20	7/4	11:00 AM	to	7/4	6:30 PM	7.5 hours
DLG.21	7/5	2:00 AM	to	7/5	6:00 AM	4.0 hours
DLG.21	7/5	1:00 PM	to	7/5	8:00 PM	7.0 hours
DLG.22	7/6	3:30 AM	to	7/6	10:30 AM	7.0 hours
DLG.23	7/6	2:30 PM	to	7/6	9:30 PM	7.0 hours
DLG.24	7/7	4:30 AM	to	7/7	10:30 AM	6.0 hours
DLG.24	7/7	3:30 PM	to	7/7	11:00 PM	7.5 hours
DLG.25	7/8	4:30 AM	to	7/8	1:00 PM	8.5 hours
DLG.25	7/8	4:00 PM	to	7/8	11:30 PM	7.5 hours
DLG.26	7/8	4:00 PM	to	7/9	4:00 PM	24.0 hours
DLG.27	7/9	4:00 PM	to	7/9	10:00 PM	6.0 hours
DLG.27	7/10	5:00 AM	to	7/10	1:00 PM	8.0 hours
DLG.27	7/10	6:00 PM	to	7/11	1:00 AM	7.0 hours
DLG.28	7/11	6:30 AM	to	7/11	1:30 PM	7.0 hours
DLG.30	7/11	6:30 PM	to	7/12	3:00 AM	8.5 hours
DLG.30	7/12	7:00 AM	to	7/12	4:00 PM	9.0 hours
DLG.31	7/12	8:30 PM	to			d
DLG.39	8/1	9:00 AM				e
Nushagak District						
Nushagak Section						
Set gillnet						
DLG.04	6/17	10:00 AM	to			b
DLG.10	6/25	3:30 AM	to	6/25	3:30 PM	12.0 hours
DLG.11	6/26	4:00 AM	to	6/26	4:00 PM	12.0 hours
DLG.12	6/27	5:00 AM	to	6/27	5:00 PM	12.0 hours

-continued-

Table 19.–Page 2 of 4.

Number ^a	Start date	Start time		End date	End time	Effective time	
DLG.13	6/27	5:00 PM	to	6/28	6:00 PM	25.0 hours	^c
DLG.14	6/28	6:00 PM	to	6/29	7:00 PM	25.0 hours	^c
DLG.15	6/30	7:30 AM	to	6/30	7:30 PM	12.0 hours	
DLG.16	7/1	9:00 AM	to	7/1	9:00 PM	12.0 hours	
DLG.17	7/1	9:00 PM	to	7/2	10:00 PM	25.0 hours	^c
DLG.18	7/2	10:00 PM	to	7/3	4:00 PM	18.0 hours	^c
DLG.19	7/3	4:00 PM	to	7/3	4:30 PM	.5 hours	^c
DLG.20	7/3	11:30 PM	to	7/4	6:30 PM	19.0 hours	
DLG.21	7/4	6:30 PM	to	7/5	6:30 PM	24.0 hours	^c
DLG.22	7/5	6:30 PM	to	7/6	8:00 PM	25.5 hours	^c
DLG.24	7/6	8:00 PM	to				^{c,d}
DLG.39	8/1	9:00 AM					^e
Nushagak District							
Igushik Section							
Drift gillnet							
DLG.04	6/17	10:00 AM	to				^b
DLG.10	6/25	10:00 AM	to	6/25	3:00 PM	5.0 hours	
DLG.11	6/26	7:00 AM	to	6/26	12:00 PM	5.0 hours	
DLG.12	6/27	7:30 AM	to	6/27	12:30 PM	5.0 hours	
DLG.13	6/27	7:30 PM	to	6/27	11:30 PM	4.0 hours	
DLG.13	6/28	8:00 AM	to	6/28	1:00 PM	5.0 hours	
DLG.14	6/28	8:30 PM	to	6/29	12:30 AM	4.0 hours	
DLG.14	6/29	9:00 AM	to	6/29	2:00 PM	5.0 hours	
DLG.15	6/30	10:00 AM	to	6/30	3:30 PM	5.5 hours	
DLG.16	7/1	10:30 AM	to	7/1	4:30 PM	6 hours	
DLG.17	7/1	11:30 PM	to	7/2	4:30 AM	5 hours	
DLG.17	7/2	11:00 AM	to	7/2	4:30 PM	5.5 hours	
DLG.19	7/3	12:00 PM	to	7/3	4:30 PM	4.5 hours	
DLG.20	7/4	11:00 AM	to	7/4	6:30 PM	7.5 hours	
DLG.21	7/5	2:00 AM	to	7/5	6:00 AM	4.0 hours	
DLG.22	7/6	3:30 AM	to	7/6	10:30 AM	7.0 hours	
DLG.26	7/8	4:00 PM	to	7/9	4:00 PM	24.0 hours	
DLG.27	7/9	4:00 PM	to	7/9	10:00 PM	6.0 hours	^c
DLG.27	7/10	5:00 AM	to	7/10	1:00 PM	8.0 hours	
DLG.27	7/10	6:00 PM	to	7/11	1:00 AM	7.0 hours	
DLG.33	7/14	1:00 PM	to				^d
DLG.39	8/1	9:00 AM					^e

-continued-

Table 19.–Page 3 of 4.

Number ^a	Start date	Start time		End date	End time	Effective time	
Nushagak District							
Igushik Section							
Set gillnet							
DLG.03	6/15	8:30 AM	to	6/15	4:30 PM	8.0 hours	
DLG.03	6/16	9:30 AM	to	6/16	5:30 PM	8.0 hours	
DLG.03	6/17	10:00 AM	to	6/17	6:00 PM	8.0 hours	
DLG.04	6/17	10:00 AM					b
DLG.04	6/18	10:30 AM	to	6/18	6:30 PM	8.0 hours	
DLG.04	6/19	11:30 AM	to	6/19	7:30 PM	8.0 hours	
DLG.04	6/20	12:00 PM	to	6/20	8:00 PM	8.0 hours	
DLG.07	6/21	1:00 PM	to	6/21	9:00 PM	8.0 hours	
DLG.07	6/22	1:30 PM	to	6/22	9:30 PM	8.0 hours	
DLG.08	6/23	2:30 PM	to	6/23	10:30 PM	8.0 hours	
DLG.08	6/24	3:30 PM	to	6/24	11:30 PM	8.0 hours	
DLG.10	6/25	3:30 AM	to	6/25	3:30 PM	12.0 hours	
DLG.11	6/26	4:00 AM	to	6/26	4:00 PM	12.0 hours	
DLG.12	6/27	5:00 AM	to	6/27	5:00 PM	12.0 hours	
DLG.13	6/27	5:00 PM	to	6/28	6:00 PM	25.0 hours	c
DLG.14	6/28	6:00 PM	to	6/29	7:00 PM	25.0 hours	c
DLG.15	6/30	7:30 AM	to	6/30	7:30 PM	12.0 hours	
DLG.16	7/1	9:00 AM	to	7/1	9:00 PM	12.0 hours	
DLG.17	7/1	9:00 PM	to	7/2	10:00 PM	25.0 hours	c
DLG.18	7/2	10:00 PM	to	7/3	4:00 PM	18.0 hours	c
DLG.19	7/3	4:00 PM	to	7/3	4:30 PM	0.5 hours	c
DLG.20	7/3	11:30 PM	to	7/4	6:30 PM	19.0 hours	
DLG.21	7/4	6:30 PM	to	7/5	6:30 PM	24.0 hours	c
DLG.22	7/5	6:30 PM	to	7/6	8:00 PM	25.5 hours	c
DLG.24	7/6	8:00 PM	to	7/7	8:00 PM	24.0 hours	c
DLG.25	7/7	8:00 PM	to	7/8	8:00 PM	24.0 hours	c
DLG.26	7/8	8:00 PM	to				c,d
DLG.39	8/1	9:00 AM					e
Togiak							
Drift and set gillnet							
DLG.05	6/25	9:00 AM	to	6/26	9:00 AM	24.0 hours	f
DLG.37	7/24	9:00 AM	to	7/25	9:00 AM	24.0 hours	g
DLG.38	7/31	9:00 AM	to	8/2	9:00 AM	48.0 hours	g
DLG.40	8/7	9:00 AM	to	8/9	9:00 AM	48.0 hours	g
DLG.41	8/14	9:00 AM	to	8/16	9:00 AM	48.0 hours	g

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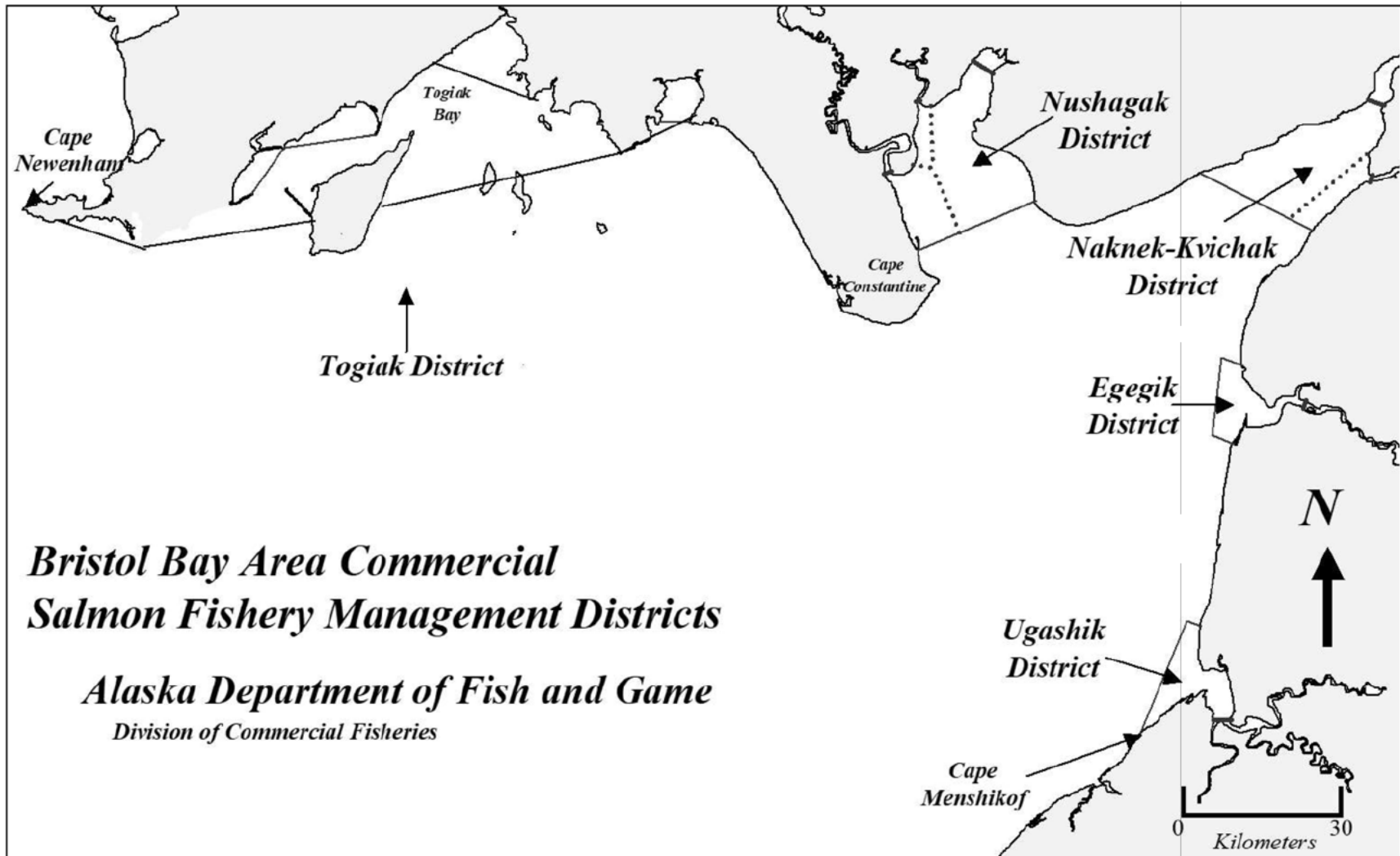


Figure 1.—Bristol Bay area commercial fisheries salmon management districts.

Appendix A2.—Salmon entry permit registration by gear and residency, Bristol Bay, 2000–2020.

Year	Drift gillnet ^a						Set gillnet ^a						Total
	Alaska resident	Non-resident	Drift total	Permits fished	% Fished	Interim use	Alaska resident	Non-resident	Set total	Permits fished	% Fished	Interim use	Drift and set ^b
2000	945	945	1,890	1,823	95%	38	735	277	1,012	921	90%	6	2,902
2001	958	925	1,883	1,566	82%	24	729	281	1,010	834	82%	2	2,893
2002	945	933	1,878	1,183	62%	16	717	289	1,006	680	67%	2	2,884
2003	923	944	1,867	1,389	74%	7	713	288	1,001	714	71%	1	2,868
2004	912	948	1,860	1,426	77%	3	703	286	989	797	81%	1	2,849
2005	895	967	1,862	1,526	82%	3	688	300	988	829	84%	1	2,850
2006	893	966	1,859	1,567	84%	1	683	302	985	844	86%	0	2,844
2007	881	981	1,862	1,621	87%	1	672	311	983	836	85%	0	2,845
2008	887	976	1,863	1,636	88%	0	678	302	980	850	87%	0	2,843
2009	864	999	1,863	1,642	88%	0	674	307	981	855	87%	0	2,844
2010	866	997	1,863	1,731	93%	0	672	311	983	861	88%	0	2,846
2011	1,005	857	1,862	1,747	94%	0	660	321	981	878	90%	0	2,843
2012	849	1,013	1,862	1,740	93%	0	654	325	979	883	90%	0	2,841
2013	862	1,000	1,862	1,709	92%	0	646	332	978	854	87%	0	2,840
2014	848	1,015	1,863	1,751	94%	0	636	341	977	881	90%	0	2,840
2015	834	1,030	1,864	1,744	94%	0	639	336	975	885	91%	0	2,839
2016	826	1,038	1,864	1,715	92%	0	637	336	973	858	88%	0	2,837
2017	842	1,021	1,863	1,728	93%	0	635	337	972	881	91%	0	2,835
2018	838	1,025	1,863	1,735	94%	0	634	336	970	879	91%	0	2,833
2019	840	1,022	1,862	1,767	95%	0	632	333	965	893	93%	0	2,827
2020	825	1,037	1,862	1,724	93%	0	627	337	964	841	87%	0	2,826
20-Year avg.	886	980	1,866	1,637	88%	5	672	313	984	846	1	1	2,850
2000–09 Avg.	910	958	1,869	1,538	82%	9	699	294	994	816	1	1	2,862
2010–19 Avg.	861	1,002	1,863	1,737	93%	0	645	331	975	875	1	0	2,838

^a Allowable permit gear: 150 fathoms for drift and 50 for set.

^b Includes interim use permits.

Appendix A3.—Sockeye salmon commercial catch by district, in numbers of fish, Bristol Bay, 2000–2020.

Year	Naknek- Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
2000	4,727,061	7,029,397	1,538,790	6,367,208	794,996	20,457,452
2001	5,280,538	2,872,662	480,509	4,734,800	810,096	14,178,605
2002	1,418,938	4,610,374	1,573,234	2,839,424	233,743	10,675,713
2003	3,348,504	2,291,502	1,748,934	6,665,965	706,008	14,760,913
2004 ^a	4,715,070	10,209,227	3,139,229	6,104,048	437,234	26,261,802
2005	6,728,469	8,015,950	2,216,635	7,096,031	465,094	24,522,179
2006	7,151,741	7,408,983	2,429,637	10,876,552	626,442	28,493,355
2007	9,022,511	6,495,908	5,026,615	8,404,111	816,581	29,765,726
2008	10,381,844	7,403,885	2,334,022	6,903,157	651,315	27,674,223
2009	8,514,944	11,527,462	2,555,263	7,730,168	559,442	30,887,279
2010	10,858,209	5,070,816	4,031,832	8,424,030	667,850	29,052,737
2011	9,016,321	4,810,362	2,643,495	4,886,552	744,626	22,101,356
2012	10,152,917	5,062,390	2,418,653	2,663,014	622,909	20,919,883
2013	4,853,030	4,779,133	2,168,216	3,163,805	467,329	15,431,513
2014 ^b	13,791,290	6,928,621	1,511,416	6,448,463	443,287	29,127,035
2015	16,531,193	8,749,567	5,473,800	5,592,816	371,903	36,719,279
2016	13,466,245	8,739,699	6,630,231	8,109,797	645,797	37,591,769
2017	8,256,304	11,980,502	5,705,712	12,322,519	516,488	38,781,525
2018	8,917,710	5,149,621	2,771,945	24,230,150	867,770	41,937,196
2019	11,527,837	14,683,614	1,037,030	14,755,905	1,018,644	43,023,030
2020	14,311,034	13,364,669	2,598,269	8,860,302	445,572	39,579,846
20-Year avg.	8,433,034	7,190,984	2,871,760	7,915,926	623,378	27,118,129
2000–09 Avg.	6,128,962	6,786,535	2,304,287	6,772,146	610,095	22,767,725
2010–19 Avg.	10,737,106	7,595,433	3,439,233	9,059,705	636,660	31,468,532

^a Total includes General District harvest of 1,656,994 fish.

^b Includes 3,958 fish that were not assigned to a district.

Appendix A4.–Chinook salmon commercial catch by district, in numbers of fish, Bristol Bay, 2000–2020.

Year	Naknek- Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
2000	1,077	1,067	893	12,120	7,862	23,019
2001	995	967	1,021	11,746	1,021	15,750
2002	1,002	284	623	40,039	2,801	44,749
2003	611	135	478	43,485	3,231	47,940
2004	1,496	1,632	891	96,759	9,310	114,280 ^a
2005	1,458	486	1,818	62,764	10,759	77,285
2006	2,333	915	2,608	84,881	16,225	106,962
2007	1,520	528	1,473	51,831	7,769	63,121
2008	1,344	416	1,191	18,968	3,087	25,006
2009	1,026	308	948	24,693	4,602	31,577
2010	1,060	223	460	26,056	5,553	33,352
2011	1,962	567	372	26,927	6,731	36,559
2012	2,306	282	212	11,952	4,829	19,581
2013	1,360	144	52	10,213	2,718	14,487
2014	1,648	461	83	11,862	1,841	15,895
2015	2,926	753	226	50,675	2,663	57,243
2016	2,797	1,144	1,435	23,783	3,831	32,990
2017	2,477	866	1,219	32,194	4,643	41,399
2018	2,398	1,520	1,407	35,938	3,457	44,720
2019	2,743	3,344	2,062	21,509	3,568	33,226
2020	816	711	1,349	6,363	767	10,006
20-Year avg.	1,727	802	974	34,920	5,325	40,256
2000–09 Avg.	1,286	674	1,194	44,729	6,667	48,379
2010–19 Avg.	2,168	930	753	25,111	3,983	32,945

^a Total includes General District harvest of 4,624 fish.

Appendix A5.—Chum salmon commercial catch by district, in numbers of fish, Bristol Bay, 2000–2020.

Year	Naknek- Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
2000	68,218	38,777	36,349	114,456	140,175	397,975
2001	16,526	33,579	43,404	526,739	211,701	831,949
2002	19,189	23,516	35,792	276,787	112,987	468,271
2003	34,481	37,116	52,908	740,372	68,154	933,031
2004	29,972	75,061	49,358	458,916	94,025	732,481
2005	204,777	62,029	39,513	966,069	124,695	1,397,083
2006	457,855	153,777	168,428	1,240,235	223,364	2,243,659
2007	383,927	157,991	242,025	953,292	202,486	1,939,721
2008	237,260	92,901	135,292	492,341	301,967	1,259,761
2009	255,520	118,212	64,974	745,161	141,375	1,325,242
2010	337,911	57,324	62,987	424,234	118,767	1,001,223
2011	218,710	39,246	34,287	296,909	113,234	702,386
2012	133,959	35,375	31,352	272,163	206,614	679,463
2013	272,754	36,792	32,624	586,117	209,946	1,138,233
2014 ^a	87,188	33,173	19,677	242,261	100,195	482,531
2015	350,169	69,057	69,967	502,820	103,773	1,095,786
2016	237,035	74,641	72,534	397,761	187,508	969,479
2017	249,696	147,330	88,126	804,878	204,518	1,494,548
2018	310,872	75,524	71,854	1,020,227	158,329	1,636,806
2019	134,517	156,260	20,249	855,428	227,731	1,394,185
2020	36,381	50,055	16,339	136,605	53,510	292,890
20-year avg.	202,027	75,884	68,585	595,858	162,577	1,106,191
2000–09 Avg.	170,773	79,296	86,804	651,437	162,093	1,152,917
2010–19 Avg.	233,281	72,472	50,366	540,280	163,062	1,059,464

^a Includes 37 fish that were not assigned to a district.

Appendix A6.–Pink salmon commercial catch by district, in numbers of fish, Bristol Bay, 2000–2020.

Year	Naknek- Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
2000	19,659	32	4	38,309	695	58,699
2001	23	0	0	308	97	428
2002	10	1	1	204	311	527
2003	24	0	0	188	32	244
2004 ^a	7,749	0	187	26,150	18,293	52,380
2005	32	0	1	554	2,108	2,695
2006	25,149	700	0	39,011	80,748	145,608
2007	9	9	2	384	533	937
2008	20,682	1,033	16	138,284	125,409	285,424
2009	23	0	1	320	544	888
2010	8,237	1,655	0	1,289,970	39,734	1,339,596
2011	13	0	5	257	352	627
2012	3,535	285	0	877,466	28,055	909,341
2013	467	0	0	208	187	862
2014	7,473	4,835	227	1,166,997	118,682	1,298,214
2015	112	0	2	807	1,219	2,140
2016	12,058	343	1,498	537,525	217,190	768,614
2017	174	214	143	7,230	26,797	34,558
2018	30,507	2,742	971	142,287	67,747	244,254
2019	530	221	183	2,021	3,875	6,830
2020	1,345	1,755	381	26,216	42,216	71,913
20-Year Avg.	13,506	1,163	290	425,620	69,686	510,266
2000–09 Avg.	14,650	353	42	48,392	45,091	108,528
2010–19 Avg.	12,362	1,972	539	802,849	94,282	912,004

Note: Averages include even numbered years only.

^a Total includes General District harvest of 1.

Appendix A7.–Coho salmon commercial catch by district, in numbers of fish, Bristol Bay, 2000–2020.

Year	Naknek- Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
2000	952	13,166	1,269	112,852	2,758	130,997
2001	3	12,603	976	3,218	284	17,084
2002	0	7,099	464	93	754	8,410
2003	42	40,577	994	583	1,047	43,243
2004	2,142	2,324	4,744	47,706	15,463	72,379
2005	3,314	20,611	8,162	42,456	8	74,551
2006	5,163	26,788	3,087	44,385	449	79,872
2007	2,180	18,111	1,954	29,578	157	51,980
2008	7,059	29,682	2,220	76,932	1,159	117,052
2009	732	10,594	2,602	35,171	9,209	58,308
2010	901	9,984	407	72,909	24,065	108,266
2011	633	440	84	4,712	7,605	13,474
2012	431	2,493	0	97,382	15,977	116,283
2013	467	812	479	124,182	11,420	137,360
2014	646	11,473	435	242,604	32,134	287,292
2015	1,253	730	2,533	6,614	26,080	37,210
2016	1,110	546	171	79,538	9,346	90,711
2017	4,754	14,274	7	167,347	54,503	240,885
2018	11,549	21,139	1,633	84,320	43,243	161,884
2019	1,418	18,233	550	33,018	27,778	80,997
2020	1,033	26,342	818	76,133	10,095	114,421
20-Year avg.	2,237	13,084	1,639	65,280	14,172	96,412
2000–09 Avg.	2,159	18,156	2,647	39,297	3,129	65,388
2010–19 Avg.	2,316	8,012	630	91,263	25,215	127,436

Appendix A8.—Total salmon commercial catch by district, in numbers of fish, Bristol Bay, 2000–2020.

Year	Naknek- Kvichak	Egegik	Ugashik	Nushagak	Togiak	Total
2000	4,818,024	7,082,486	1,577,446	6,645,252	946,486	21,069,694
2001	5,299,384	2,919,874	526,114	5,277,729	1,032,116	15,055,217
2002	1,439,831	4,641,902	1,610,548	3,157,042	350,596	11,199,919
2003	3,385,814	2,369,459	1,804,199	7,452,178	778,472	15,790,122
2004 ^a	4,758,330	10,288,807	3,194,507	6,734,064	574,325	27,233,322
2005	6,940,395	8,099,368	2,266,400	8,168,138	602,660	26,076,961
2006	7,641,821	7,591,163	2,603,760	12,285,064	947,228	31,069,036
2007	9,414,797	6,674,941	5,272,187	9,440,219	1,027,528	31,829,672
2008	10,651,517	7,528,622	2,472,742	7,629,892	1,082,937	29,365,710
2009	8,774,759	11,658,846	2,623,819	8,774,759	714,804	32,546,987
2010	11,208,947	5,144,104	4,095,854	10,222,381	866,201	31,537,487
2011	9,240,963	4,853,480	2,678,405	5,216,149	872,551	22,403,764
2012	10,293,536	5,101,370	2,450,220	3,918,549	878,294	22,641,969
2013	5,127,632	4,816,881	2,201,371	3,884,525	691,600	16,722,009
2014 ^b	13,888,262	6,978,563	1,531,838	8,112,236	696,139	31,211,033
2015	16,885,517	8,819,956	5,546,460	6,152,464	505,638	37,910,035
2016	13,719,245	8,816,373	6,705,869	9,148,404	1,063,672	39,453,563
2017	8,513,405	12,143,186	5,795,207	13,334,168	806,949	40,592,915
2018	9,273,036	5,250,546	2,847,810	25,512,922	1,140,546	44,024,860
2019	11,667,045	14,861,672	1,060,074	15,667,881	1,281,596	44,538,268
2020	14,350,609	13,443,532	2,617,156	9,105,619	552,160	40,069,076
20-Year avg.	8,698,003	7,291,288	2,913,947	8,718,807	827,239	28,507,832
2000–09 Avg.	6,621,862	6,939,174	2,389,070	7,447,752	778,986	24,329,870
2010–19 Avg.	10,981,759	7,678,613	3,491,311	10,116,968	880,319	33,103,590

^a Total includes General District harvest

^b Total includes 3,995 fish that were not assigned to a district.

Appendix A9.–Commercial sockeye salmon catch, in percent, by gear type and district, Bristol Bay, 2000–2020.

Year	Naknek-Kvichak						Nushagak						Togiak		Total				
	Setnet sec.			NRSHA ^a			Egegik		Ugashik		Setnet sec.			WRSHA ^b		Drift	Set	Drift	Set
	Drift	Nak.	Kvi.	Drift	Set	Drift	Set	Drift	Set	Drift	Nush.	Igushik	Drift	Set					
2000	84	11	5			84	16	87	13	77	17	6	68	32	57	43	80	20	
2001	82	16	2	74 ^c	26 ^c	86	14	80	20	77	18	5			66	34	80	20	
2002				64 ^c	36 ^c	85	15	88	12	77	22	1	67	33	62	38	79	21	
2003	91	9	0	65 ^c	35 ^c	81	19	89	11	83	15	2			63	37	79	21	
2004	79	11	10	88	12	86	14	88	12	84	15	1			55	45	79	21	
2005				81	19	82	18	87	13	84	14	2			56	44	66	34	
2006	86	8	5	81	19	84	16	88	12	87	11	2			53	47	85	15	
2007	82	12	6	80	12	84	16	92	8	80	17	3			59	41	81	19	
2008	81	12	7			85	15	92	8	79	16	5			60	40	82	18	
2009	80	12	9			85	15	87	13	76	20	4			60	40	82	18	
2010	81	10	9			84	16	90	10	78	17	6	71	29	61	39	82	18	
2011	84	10	7			83	17	87	13	76	16	7			60	40	81	19	
2012	85	7	8			83	17	90	10	67	27	6	45	55	67	33	73	27	
2013	84	9	7			85	15	90	10	78	17	5			65	35	84	16	
2014	83	9	8			89	11	82	18	73	16	7			58	42	82	18	
2015	84	8	8			81	19	91	9	69	22	9			50	50	81	19	
2016	83	8	9			82	18	91	9	67	22	11			56	44	81	19	
2017	70	17	13			87	13	92	8	76	18	4			56	44	80	20	
2018	71	17	12	84	16	80	20	78	22	82	13	2	0	3	51	49	81	19	
2019	77	14	9			81	19	66	34	78	18	3		2	49	51	79	21	
2020	80	12	8			86	14	74	26	69	26	3	3		47	53	79	21	
2000–09 Avg.	83	11	6	76	23	84	16	88	12	80	17	3	68	33	59	41	79	21	
2010–19 Avg.	80	11	9	84	16	84	17	86	14	74	19	6	39	22	57	43	80	20	
Allocation ^d	84	8	8	84	16	86	14	90	10	74	20	6	NA	NA	NA	NA	NA	NA	

Note: Blank cells indicate no data.

^a Naknek River Special Harvest Area (NRSHA), Naknek-Kvichak District; allocation plan enacted in December 2003.

^b Wood River Special Harvest Area (WRSHA), Nushagak District.

^c NRSHA prior to allocation plan; fishing periods were alternated between gear types.

^d The Alaska Board of Fisheries enacted an allocation plan in 1998; it was reviewed in December 2003.

Appendix A16.—Inshore commercial catch and escapement of sockeye salmon in the Nushagak District by river system, in numbers of fish, Bristol Bay, 2000–2020.

Year	Catch	Escapement			Total	Total Run
		Wood ^a	Igushik ^a	Nushagak ^b		
2000	6,367,502	1,300,026	413,316	446,286 ^c	2,159,628	8,527,130
2001	4,735,718	1,458,732	409,596	897,112 ^c	2,765,440	7,501,158
2002	2,839,918	1,283,682	123,156	349,155 ^c	1,755,993	4,595,911
2003	6,667,538	1,459,782	194,088	642,093 ^c	2,295,963	8,963,501
2004	6,104,492	1,543,342	109,650	543,872 ^c	2,196,864	8,301,356
2005	7,096,296	1,496,550	365,709	1,106,703 ^c	2,968,962	10,065,258
2006	10,876,552	4,008,102	305,268	548,410	4,861,780	15,738,332
2007	8,404,532	1,528,086	415,452	518,041	2,461,579	10,866,111
2008	6,903,367	1,724,676	1,054,704	492,546	3,271,926	10,175,293
2009	7,731,518	1,319,232	514,188	484,149	2,317,569	10,049,087
2010	8,424,702	1,804,344	518,040	468,696	2,818,215	11,242,917
2011	4,887,305	1,098,006	421,380	428,191	1,968,744	6,856,049
2012	2,663,014	764,202	193,770	432,438	1,392,410	4,055,424
2013	3,163,805	1,183,348	387,744	894,172	2,466,552	5,630,357
2014	6,447,650	2,764,614	340,590	618,477	3,723,681	10,171,331
2015	5,593,702	1,941,474	651,172	796,648	3,389,294	8,982,996
2016	8,886,077	1,309,707	469,230	680,513	2,459,450	11,345,527
2017	12,322,519	4,274,224	578,700	2,852,306	7,705,230	20,027,749
2018	24,230,150	7,507,254	770,772	1,247,460	9,525,486	33,755,636
2019	14,755,905	2,073,276	256,074	709,349	3,038,699	17,794,604
2020	8,860,302	2,243,886	323,814	1,228,059	3,795,759	12,656,061
20-Year avg.	7,955,113	2,092,133	424,630	757,831	3,277,173	11,232,286
2000–09 Avg.	6,772,743	1,712,221	390,513	602,837	2,705,570	9,478,314
2010–19 Avg.	9,137,483	2,472,045	458,747	912,825	3,848,776	12,986,259

^a Tower count.

^b Total escapements determined for the entire drainage using Nushagak River sonar (at Portage Creek) estimate.

^c Nushagak River sonar escapement estimates prior to 2006 were adjusted after the 2012 season to account for a transition in sonar technology in 2006 (Buck et al. 2012).

Appendix A22.—Average round weight (lb) of the commercial salmon catch by species, Bristol Bay, 2000–2020.

Year	Sockeye	Chinook	Chum	Pink	Coho
2000	6.1	15.7	6.9	3.7	7.6
2001	6.7	17.4	8.2	2.8	7.1
2002	6.1	18.2	7.1	3.8	6.8
2003	6.3	16.0	6.5	4.0	6.9
2004	5.8	15.4	6.6	4.1	6.8
2005	6.3	16.6	7.1	3.5	6.3
2006	5.7	17.0	7.7	3.7	6.4
2007	5.8	13.5	6.1	3.5	6.4
2008	5.8	15.5	6.5	3.6	6.5
2009	5.9	15.2	6.3	3.3	6.5
2010	5.5	14.7	6.4	3.2	8.9
2011	6.2	13.0	7.0	3.2	6.8
2012	5.7	13.9	6.7	3.1	5.4
2013	6.0	15.3	6.4	3.9	6.0
2014	5.6	15.4	6.1	3.7	6.4
2015	5.2	15.1	6.1	3.7	6.7
2016	5.4	12.6	6.0	4.0	5.8
2017	5.5	11.2	6.4	3.9	6.3
2018	5.1	10.5	6.3	3.6	6.5
2019	5.1	11.6	6.2	3.2	6.0
2020	5.1	9.6	6.0	3.3	5.5
20-Year avg.	5.8	14.7	6.6	3.6	6.6
2000–09 Avg.	6.0	16.1	6.9	3.6	6.7
2010–19 Avg.	5.5	13.3	6.4	3.6	6.5

Appendix A23.—Average price paid in dollars per pound for salmon, by species, Bristol Bay, 2000–2020.

Year	Sockeye	Chinook	Chum	Pink	Coho
2000	0.67	0.46	0.09	0.08	0.41
2001	0.42	0.31	0.11	0.09	0.33
2002	0.49	0.33	0.09	0.06	0.32
2003	0.51	0.32	0.08	0.07	0.27
2004	0.51	0.37	0.09	0.09	0.31
2005	0.62	0.58	0.11	0.02	0.29
2006	0.66	0.71	0.12	0.03	0.38
2007	0.67	0.64	0.13	0.03	0.41
2008	0.75	0.83	0.17	0.17	0.55
2009	0.80	0.89	0.17	0.07	0.56
2010	1.07	1.18	0.28	0.36	0.66
2011	1.17	1.04	0.37	0.29	0.74
2012	1.18	1.31	0.34	0.39	0.55
2013	1.61	1.48	0.30	0.14	0.79
2014	1.35	1.32	0.41	0.24	0.84
2015	0.64	0.56	0.30	0.06	0.39
2016	0.96	0.84	0.30	0.18	0.58
2017	1.30	0.94	0.29	0.15	0.70
2018	1.60	1.02	0.37	0.27	0.68
2019	1.53	0.83	0.32	0.10	0.70
2020 ^a	0.70	0.50	0.25	0.05	0.70
20-Year avg.	0.93	0.78	0.21	0.14	0.53
2000–09 Avg.	0.68	0.55	0.11	0.07	0.42
2010–19 Avg.	1.24	1.05	0.33	0.22	0.66

Source: OCEANAK ADF&G Commercial Operators Annual Report (COAR) Buy Subject Area. ADF&G is not responsible for errors or deficiencies in reproduction, subsequent analysis, or interpretation.

Note: The exvessel value includes any post-season adjustments or bonuses paid after the fish was purchased. Prices represent a weighted average price per pound by species and area. Prices may reflect a mixture of gear types and delivery conditions.

^a Price does not include postseason adjustments or bonuses.

Appendix A24.—Estimated exvessel value of the commercial salmon catch by species, in thousands of dollars, Bristol Bay, 2000–2020.

Year	Sockeye	Chinook	Chum	Pink ^a	Coho	Total ^b
2000	78,214	152	228	16	687	79,297
2001	38,211	135	712		43	39,101
2002	31,962	277	287	0	18	32,544
2003	46,897	236	423		238	47,794
2004	76,175	634	423	171	150	77,553
2005	96,044	720	946		168	97,878
2006	110,372	1,240	1,441	19	191	113,263
2007	119,196	542	1,583		120	121,441
2008	118,028	297	1,344	171	401	120,241
2009	142,457	387	1,347		177	144,368
2010	176,784	495	1,743	1,567	470	181,059
2011	154,851	455	1,542		62	137,726
2012	139,675	338	1,475	860	345	142,693
2013	148,681	366	2,049		654	151,750
2014	217,311	311	1,214	1,209	1,990	222,035
2015	123,547	347	1,758		92	125,744
2016	192,349	361	1,688	547	312	195,257
2017	271,549	431	2,594		1,071	275,645
2018	344,253	477	2,891	238	720	348,579
2019	300,883	193	2,158	1	267	303,502
2020 ^c	140,143	48	442	11	437	141,081
20-Year avg.	146,372	420	1,392	436	409	147,874
2000–09 Avg.	85,756	462	873	75	219	87,348
2010–19 Avg.	206,988	377	1,911	737	598	208,399

Source: OCEANAK ADF&G Commercial Operators Annual Report (COAR) Buy Subject Area. ADF&G is not responsible for errors or deficiencies in reproduction, subsequent analysis, or interpretation.

Note: The exvessel value includes any post-season adjustments or bonuses paid after the fish was purchased. Prices represent a weighted average price per pound by species and area. Prices may reflect a mixture of gear types and delivery conditions. Blank cells represent no data.

^a Averages include even years only.

^b Total may vary from actual sum due to rounding.

^c Exvessel value does not include postseason adjustments or bonuses. Derived from price per pound multiplied by the commercial catch.

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Advisory Announcement

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Travis Elison and Aaron Tiernan

BRISTOL BAY 2019 OUTLOOK FOR COMMERCIAL SALMON FISHING

COVID-19

Under Alaska’s Health Mandates 10, 11, and 12, commercial fishing is an Essential Business and is part of Alaska’s Essential Services and Critical Infrastructure. Commercial fishermen should ensure that all travel and other activities in support of commercial fishing operations follow protocols in Alaska COVID-19 Health Mandates. COVID-19 Health Mandates may be found here: <https://gov.alaska.gov/home/covid19-healthmandates/>.

The department is continuing preseason preparations for normal operations of all run assessment projects and fishery management functions following the protocols in Alaska COVID-19 Health Mandates. We ask that forms required for fishery participation be submitted electronically and well in advance of the season when possible. See below for details.

INTRODUCTION

This document provides general information to fishermen, processors, and the public concerning the upcoming Bristol Bay salmon season. Included is the general framework for management of each of the five major districts and the 2020 salmon forecast.

During the season, Bristol Bay salmon fishing announcements are broadcast on marine VHF Channel 07A. Current fishing announcements are aired on local radio stations – KAKN and KDLG. As conditions in the fishery change, for the most current information, fishermen should stand by at regular announcement times: 9:00 a.m., 12:00 noon, 3:00 p.m., 6:00 p.m., and 8:00 p.m., unless otherwise stated. Information is also available via telephone; for east-side fisheries (Naknek-Kvichak, Egegik, and Ugashik), dial 246-INFO (4636), for west-side fisheries (Nushagak and Togiak) dial 842-5226. Fishermen are asked to note that regular office hours at the Dillingham ADF&G office will be 8:00 a.m. to 5:00 p.m. Monday thru Friday. In addition to the regular office hours, from June 20 to July 12 the Dillingham office will be open on weekends from 8:00 a.m. until 12:00 noon. In King Salmon the office hours are as follows: June 1 to June 14 and after July 17: 8:00 a.m. to 12:00 p.m., and 1:00 p.m. to 4:30 p.m., closed for lunch and weekends. From June 15 to July 17: 8:00 a.m. to 5:00 p.m. seven days per week.

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- AWT has noted an increase in violations for grounding and failure to report lost gillnets. Fisherman are reminded to review gillnet specifications and operations regulations and be aware that fishing a drift gillnet when the net, or vessel to which it is attached, is grounded is prohibited by regulation and the loss of a gillnet, or portion of the gillnet, is required to be reported to a local department office in Dillingham or King Salmon within 15 hours.

Fishermen and processors should be aware of the reporting requirements in 5 AAC 06.377(b) that state:

“Each commercial fisherman shall report, on an ADF&G fish ticket, at the time of landing, the number of king and coho salmon taken but not sold.”

SALMON OUTLOOK

BAYWIDE

The 2020 Bristol Bay inshore sockeye salmon run is forecasted to be approximately 46.6 million fish. Based on the forecast and using the mid-points of the lower or upper portion of escapement goal ranges, depending on forecasted run size, 34.6 million fish are potentially available for commercial inshore harvest (Table 1). The department manages fisheries based on inseason information regarding abundance. The inseason management approach uses a suite of assessment tools to provide information on abundance and run timing in each district, and that information will be used by the department to determine fishing opportunity.

The commercial salmon season in Bristol Bay opens June 1 by regulation. Fishing in eastside districts and Togiak will be allowed using a weekly schedule that will vary by district. The schedules are in place to balance fishing opportunity with escapement in the early part of the season, particularly for king salmon. As each run develops and sockeye salmon run characteristics become defined within individual districts, fishing time will be adjusted accordingly. In the Nushagak District, management will focus on king salmon in the early part of the season, and switch to sockeye salmon management as abundance dictates.

2020 Regulatory Changes

The Alaska Board of Fisheries (BOF) met in Anchorage in March 2020 and took action on proposal 279, which repealed 5AAC 06.333(a)(3). The result of this action will allow the use of dual permit operations to continue in the Nushagak District and the Ugashik District after June 29 if/when the Naknek River Special Harvest Area is in use.

NAKNEK-KVICHAK DISTRICT

An inshore run of approximately 19.0 million sockeye salmon is expected for the Naknek-Kvichak District in 2020. Based on the forecast, the projected harvest in the Naknek-Kvichak District is approximately 12.3 million sockeye salmon: 5.9 million from the Kvichak River, 2.3 million from the Alagnak River, and 4.1 million from the Naknek River (Table 1). Sockeye salmon returning to the Naknek-Kvichak District are predicted to be 39% age-1.2, 44% age-1.3, 14% age-2.2, and 2% age-2.3 fish.

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Beginning 9:00 a.m. Monday, June 1, commercial fishing in the Ugashik District will be allowed on a 9:00 a.m. Monday to 9:00 a.m. Friday schedule through 9:00 a.m. Friday, June 19. Based on the Kvichak River sockeye salmon forecast, fishing will begin in the full Ugashik District. Additional fishing time after June 19 will depend on fishery performance and run strength indicators. Permit holders should note that the regulation restricting opportunity to no more than 48 hours between June 16 and June 23 will not be in effect in 2020.

In addition, subsistence fishing will be permitted in the waters of the Ugashik commercial district from 12:01 a.m. Monday, June 1 until 11:59 p.m. Friday, June 19.

It is unknown at this time whether walrus will return to the Cape Greig area. If they do, then the department will use the adjusted line from 2016. If they do not, the district boundaries will revert to those in regulation at 5 AAC 06.200(d). The first announcement of the 2020 season will clarify which boundary will be in place for the summer.

At the March 2013 meeting, the BOF made changes to when Area T permit holders may fish in the inner portion of the Cinder River Section (river and lagoon) and the Inner Port Heiden Section. The BOF adopted proposals that would allow Area T permit holders to fish within the inner portion of the Cinder River Section and Inner Port Heiden Section during all months when open by regulation. For further information contact ADF&G in Port Moller at 907-375-2716. Area T permit holders who fish the Cinder River and Port Heiden sections and deliver their catch in the Ugashik District are reminded to report the section of catch on the appropriate fish tickets and note that transporting fish from the sections mentioned above to deliver in the Ugashik District is not permitted during July.

NUSHAGAK DISTRICT

Nushagak River king salmon are managed according to the *Nushagak-Mulchatna King Salmon Management Plan* (5 AAC 06.361). This plan directs the commercial fishery to be managed for an inriver goal of 95,000 king salmon. King salmon escapement in the Nushagak River did not meet the lower end of the escapement goal range in 2019. In order to avoid consecutive years of escapement below the escapement goal range, a conservative approach to management of the commercial fishery in the Nushagak District will be used. The department will closely monitor king salmon escapement and does not anticipate any directed king salmon openings in 2020.

The Nushagak District sockeye salmon inshore run forecast is approximately 12.0 million fish: 2.3 million for escapement and 9.7 million potentially available for harvest in the Nushagak District commercial salmon fishery (Table 1). The total inshore run by river system is: Wood River 8.7 million (escapement goal range 700,000 to 1.8 million), Igushik River 1.1 million (escapement goal range 150,000 to 400,000), and Nushagak River 2.9 million (escapement goal range of 370,000 to 900,000). Approximately 54% of the forecasted run is expected to be age-1.2 sockeye salmon, < 2% age-2.2, 43% age-1.3, and < 1% age-2.3 fish.

The strategy for 2020 is to start directed sockeye salmon openings once we have an escapement of at least 100,000 sockeye salmon past the Wood River tower. This is contingent upon the Nushagak River king salmon escapement projecting to be at least 95,000 fish. If Nushagak River king salmon escapement is projecting below 95,000 fish, the department may wait to allow directed sockeye salmon openings to for additional king salmon to pass through the commercial fishing district.

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Openings will be scheduled based on sockeye salmon escapement levels in the Nushagak and Wood rivers. Mesh size will be limited to 5.5 inches or smaller. If the Nushagak River sockeye salmon escapement decreases relative to expected escapements, the department may first warn and then impose the 4.75-inch mesh restriction in the Nushagak District. Based on changes made by the BOF in December 2015, the department would also open the Wood River Special Harvest Area (WRSHA) at this time. Subsequently, if Nushagak River sockeye salmon escapement falls below the projected 370,000 fish curve, then the department may limit fishing to only the WRSHA to protect Nushagak River sockeye salmon. Commercial openings in the district may follow as allowed by escapement levels in the Nushagak River.

Igushik River sockeye salmon will be managed independently of the Nushagak-Wood River sockeye salmon stocks. Set gillnet fishing will begin in the Igushik Section when there is a market available. Initial openings will be 8-hours per day and additional time will be added if large harvests or escapement information indicate more time is warranted. Drift gillnet openings in the Igushik Section will be added as needed to control sockeye salmon escapement. Igushik River sockeye salmon returns can be quite variable relative to forecasted run strength. Management will incorporate a readiness to respond with increasing early set gillnet openings and attempt to maintain the 6% sockeye salmon harvest allocation to the Igushik Section set gillnet group by only adding drift gillnet openings as needed.

The department will switch to pink and coho salmon management within the Nushagak District around July 23, when sockeye salmon harvest decreases. Sonar counts will cease approximately July 25. After that, management decisions will be based on catch per unit effort, subsistence reports, and possibly aerial surveys.

District test fishing for inseason management may be conducted periodically depending on run characteristics. Permit holders interested in test fishing in the Nushagak District should contact Tim Sands in Dillingham at (907) 842-5227.

TOGIAK DISTRICT

The 2020 inshore run of Togiak River sockeye salmon is forecast to be approximately 880,000 fish. Based on the forecast, approximately 690,000 sockeye salmon will potentially be available for commercial harvest. The escapement goal range is 120,000 to 270,000 sockeye salmon. Approximately 32% of the run is expected to be age 1.2; 1% of the run is expected to be age 2.2; 66% is expected to be age 1.3; and 1% is expected to be age 2.3.

Unlike other fishing districts in Bristol Bay that require emergency orders to announce fishing periods, Togiak District follows a regular weekly schedule that allows fishing in Togiak Bay Section four days per week, fishing in Kulukak Section two and a half days per week, and fishing in Matogak, Osviak, and Cape Peirce Sections five days per week. Following the *Registration and Reregistration* regulations, permit holders are restricted from fishing in the Togiak District until 9:00 a.m. July 27 if they have fished in any other district in Bristol Bay, and conversely, restricts permit holders from fishing in any other district until 9:00 a.m. July 27 if they have fished in the Togiak District. A 2015 BOF action now requires vessel transfers to be restricted in Togiak District similarly to the restriction of permit transfers. Other recent regulation changes prevent drift gillnet fishing effort near the Togiak River mouth through July 15 and restricts mesh size to 5.5 inches or smaller between June 15 and July 15 for the conservation of king salmon.

King salmon run strength to the Togiak River has been considered below average for several years.

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