

Division of Commercial Fisheries
Sam Rabung, Director

Nome Office
PO Box 1148
Nome, AK 99762-1148



Alaska Department of Fish and Game
Doug Vincent-Lang, Commissioner

PO Box 115526
Juneau, AK 99811-5526
www.adfg.alaska.gov

Advisory Announcement

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CONTACT: Jim Menard or Kevin Clark

**Norton Sound Area Manager & Asst. Area Manager
(907) 443-5167 or (800) 560-2271**

2021 NORTON SOUND SALMON SEASON SUMMARY

COMMERCIAL SALMON FISHERY

Poor runs of chum and coho salmon resulted in the poorest commercial harvests of those species since the record low harvests of the early 2000s. The king and sockeye salmon runs although not as poor as the chum and coho salmon runs were lower than recent years. The pink salmon run was well below the record runs of the last 5 years, but the harvest was a record harvest for an odd-numbered year and the highest harvest in the 2000s and fifth highest harvest in the 61-year history of the fishery. The high pink harvest was because there were two buyers for the first time in 20 years interested in buying pink salmon. This summary should be considered preliminary and will be updated with additions and corrections in subsequent reports.

Table 1 lists the 1961–2021 Norton Sound commercial salmon harvests. The combined commercial harvest of all salmon species was 303,983 fish and ranked third lowest in the last decade, but the eighth highest in the 2000s. There were 131 commercial permit holders that fished in 2021, slightly below the recent 5-year (140) average. The 2021 fishery value to the permit holders of \$444,772 was less than a quarter of the value of the fishery in the previous 5 years, but over 53% higher than last year. This year's higher value, compared to last year, was because of a market for pink salmon.

Table 2 lists the salmon harvests by species, number, and weight in each subdistrict in 2021. This year's 5.7 pound average weight for coho salmon was the same record low weight as last year. This is much smaller than the previous record low average weight of 6.4 pounds from 2019. Chum salmon had a record low weight of 5.5 pounds and the previous low weight was 6.4 pounds in 1969. However, the record low chum salmon weight this year was likely due to the fact that there was only one chum salmon fishing period in July with the mesh size restricted to 6 inches or less and there were over 30 pink salmon fishing periods in July with mesh size restricted to 4 ½ inches or smaller. The majority of the chum salmon harvest in 2021 occurred during these pink salmon fishing periods.

The coho salmon catch of 7,189 fish was 5% of the recent 5-year (141,864) average and just over 6% of the recent 10-year (112,578) average (Table 3). The coho salmon catch was the lowest since 2002 (1,759) and the second lowest in the last 40 years. The chum salmon catch of 6,394 fish was 5% of the recent 5-year (127,216) average and just over 5% of the recent 10-year (118,336) average

(Table 3). The chum salmon catch was the lowest since 2005 (3,983) and 3 other years in the early 2000s.

Two salmon buyers operated in Norton Sound this year. The Unalakleet fish plant operated by Norton Sound Seafood Products (NSSP) was their base of commercial salmon fisheries operations. NSSP also processed some of the commercial catch at the NSSP plant in Nome and had a processing vessel during the pink salmon fishery in July. Icicle Seafoods, Inc. also operated a processing vessel, but only bought pink salmon during the fishery in July.

Prices paid per pound in 2021 were \$3.00 for king salmon, \$2.40 for sockeye salmon, \$2.05 for coho salmon, \$0.95 for chum salmon, and \$0.20 for pink salmon. The king salmon price was the same as 2020 while sockeye salmon increased \$1.00 per pound, coho salmon increased \$0.28 per pound, chum salmon increased \$0.43 per pound, and pink salmon increased \$0.20 per pound.

SUBSISTENCE SALMON FISHERY

Subsistence salmon fishers in the Port Clarence District and Subdistricts 1–3 (Nome, Golovin, and Elim) were required to possess a subsistence permit for each household that fished in these locations. The permits identify the type of gear used and the bag limit and are specific to each body of water. On each permit, the permit holder records the catch in numbers of fish and by species for each day fished. Subsistence permit applicants could apply online and print their permits, receive one at the Nome office, or call the Nome office to request a permit be mailed out.

The only places where there are limits on subsistence salmon harvest are in the Nome Subdistrict and Pilgrim River and Salmon Lake in the Port Clarence District. Subsistence permits are important to management because they identify users and harvests, but the actual catch information cannot be compiled in most circumstances until well after the season when the permits are returned. In southern Norton Sound, villages are surveyed to estimate the subsistence harvest and likewise this information is not available until well after the season.

SEASON SUMMARY BY SUBDISTRICT

Nome - Subdistrict 1

This was the ninth consecutive season that commercial fishing was allowed in the Nome Subdistrict since the mid-90s. There were 7 permit holders that fished in 2021, the same as in 2018 and 2019, but down from 12 permit holders that fished last year.

The pink salmon was average for an odd-numbered year but well below the record runs in 2017 and 2019. Sockeye, chum and coho salmon runs were below average to well below average when compared to recent years. There were only four commercial salmon fishing periods targeting coho salmon this year and the season's catch was 408 coho salmon (Table 2). The catch was well below the record catches of the last four years that ranged from 6,000 to 9,000 coho salmon.

High water limited weir operations this year. Of the three chum salmon escapement goal ranges, only Eldorado River surpassed the low end of the goal of 4,400–14,200 chum salmon with 6,283 chum salmon counted through the weir (Table 4). Both Nome River and Snake River weirs were flooded out in late July, but chum salmon passages by that date were some of the lowest on record. The pink salmon passage of 4,615 fish at Nome River by late July was above the odd-numbered year escapement goal of 3,200 fish.

Golovin - Subdistrict 2

Subdistrict 2 had one chum salmon, seven pink salmon, and five coho salmon commercial fishing periods. The chum and coho salmon fishing periods were 24 hours in length and the pink salmon fishing periods ranged from 8 to 24 hours in length. The 11 permit holders that fished this year were less than the 17 to 18 permit holders that fished the last several years. The commercial catch was 1 king; 142 sockeye; 3,515 chum salmon; 18,395 pink salmon; and 707 coho salmon (Table 2). The harvest for all salmon except for pink salmon was well below average compared to recent years. Although the pink salmon run was well below the record runs of the last five years the pink salmon harvest was the highest since 2012 because of buyer interest in pink salmon this year.

The Fish River counting tower was unable to operate this year because of high water. High water also prevented an aerial survey of the Niukluk River and Ophir Creek to determine if the coho salmon aerial survey goal had been reached.

Elim - Subdistrict 3

Commercial fishing in Subdistrict 3 was limited to pink salmon and coho salmon fishing periods this year. There were 9 pink salmon fishing periods ranging from 8 to 24 hours in length and there were 4 coho salmon fishing periods that were 24 hours in length. The 18 permit holders that fished this year was the first time the number of permit holders fishing was below 25 since 2013. The salmon harvest was 7,978 fish (Table 2), and although this was twice the harvest of last year, it was well below the recent 5-year average of more than 40,000 salmon. The pink salmon harvest of 6,601 salmon run was much poorer than expected and the coho salmon harvest of 883 fish, although just above 857 coho salmon harvested last year, was the second lowest in over 30 years when commercial fishing did occur.

The Kwiniuk River tower, which began in 1965, is the longest running escapement project in Norton Sound. Escapement counts were 219 king salmon, 3,681 chum salmon, 56,724 pink salmon, 72 sockeye salmon, and 1,347 coho salmon (Table 4). King salmon passage was below the escapement goal of 250 fish and chum salmon passage was below the escapement goal range of 9,100–32,600 fish for the second year in a row. High water prevented counting for nearly one month from July 28 through August 24 and an estimated one-quarter of the pink salmon run and three-quarters of coho salmon run likely passed without being counted during that time. However, the pink salmon escapement goal of 8,400 fish was easily reached and the escapement was above most odd-numbered years. The coho salmon aerial survey goal of 650–1,300 fish was likely met based on the tower count and the estimated passage that was not counted, however no survey was flown because of poor weather conditions and aircraft availability.

Norton Bay - Subdistrict 4

Commercial fishing in Subdistrict 4 was limited to fishing periods that were directed at pink and coho salmon. There were 3 coho salmon gillnet fishing periods of 24 hours in length and 7 pink salmon gillnet fishing periods that ranged from 8 to 24 hours in length. There were 3 experimental purse seine openings that ranged from 8 hours to 36 hours in length. Catches were poor throughout the season. The commercial harvest was 8 sockeye, 45 chum, 14,190 pink and 166 coho salmon (Table 2). The 14,190 pink salmon harvest includes 5,662 fish harvested during one period in the seine fishery.

There were 7 gillnet permit holders that fished and that was the same number of permit holders that fished last year. There were 2 experimental seine permit holders that fished. The chum and coho harvests were the lowest harvest since commercial fishing resumed in 2008. The pink salmon gillnet harvest was the fourth highest harvest since 2008 as was the combined gillnet and seine harvest.

A counting tower on the Ungalik River was operated by Norton Sound Economic Development Corporation (NSEDC) for the third year. High water resulted in the project ending early, but the pink salmon escapement was over 600,000 fish and the chum salmon escapement of over 16,000 fish was the highest in project history (Table 4). The Inglutalik River tower project also operated by NSEDC ended early and both the pink salmon and chum salmon escapements were much lower than Ungalik River.

Shaktoolik and Unalakleet - Subdistricts 5 and 6

Both the Shaktoolik and Unalakleet Subdistricts share a common commercial fishing boundary and management actions typically encompass both subdistricts because salmon tend to intermingle and the harvest in one subdistrict affects the movement of fish in the adjacent subdistrict.

Commercial fishing was limited to pink salmon and coho salmon fishing periods this year. There were 9 pink salmon gillnet fishing periods in Shaktoolik and there were 10 pink salmon gillnet fishing periods in Unalakleet ranging from 8 hours to 48 hours in both subdistricts. There were 5 coho salmon gillnet fishing periods of 24 hours in length in both subdistricts. There were 5 experimental purse seine fishing periods in Shaktoolik that ranged from 8 to 36 hours in length and there were 4 experimental purse seine fishing periods in Unalakleet that ranged from 8 to 48 hours in length.

There were 26 gillnet permit holders that fished in the Shaktoolik District and that was one less than fished last year. In Unalakleet there were 63 gillnet permit holders and that was 8 more than fished last year. Two experimental purse seine permit holders fished in Shaktoolik, and one experimental purse seine permit holder fished in Unalakleet.

Pink salmon catches were above average in both subdistricts and other salmon catches were below average. The Shaktoolik pink salmon catch was 80,735 fish of which 5,270 pink salmon were caught during one seine fishing period. In Unalakeet the pink salmon catch was 169,991 fish of which 17,832 pink salmon were caught during one seine fishing period. The Shaktoolik pink salmon gillnet harvest was the fourth highest harvest on record. The Unalakeet pink salmon gillnet harvest was the third highest harvest on record.

The Shaktoolik chum salmon catch of 1,237 fish (Table 2) was the lowest since the early 2000s and the coho salmon catch of 2,593 fish although better than last year was the fifth lowest in over 40 years. The Unalakeet chum salmon catch of 895 fish was the lowest since 2002 and the second lowest catch on record. The Unalakeet coho salmon catch of 2,432 fish was better than last year but was the sixth lowest catch on record.

High water delayed the operation of the Unalakeet River floating weir and the North River counting tower. The Unalakeet River weir became operational on June 30 and the North River tower became operational on July 8. The Shaktoolik River counting tower was operational on June 23. All escapement counting projects were knocked out by high water in the last week of July. The chum salmon escapements were well below average at all the projects. The pink salmon escapement at North River tower was fourth highest for an odd-numbered year since 1997. At Unalakeet River weir the picket spacing now allows pink salmon to pass through without being counted and at Shaktoolik River the pink salmon escapement was near the median in eight years of counts.

The North River king salmon escapement of 825 fish was below the low end of the escapement goal range of 1,200 to 2,600 fish (Table 4) for the second year in a row.

Port Clarence District

Port Clarence District is the salmon district immediately to the northwest of the Norton Sound District and it has the largest run of sockeye salmon in Norton Sound. However, this year the sockeye salmon run was below average for the second year in a row, and for the first time since 2014 that the department closed subsistence net fishing on the Pilgrim River.

Sockeye salmon return to Salmon Lake via Pilgrim River which is easily accessible by a road from Nome. Permits have been required for subsistence salmon fishing in Pilgrim River since 1964. Each year, the subsistence catch seasonal limit starts at 25 sockeye salmon and often the department will raise the limit because of runs well above escapement needs. Most of the subsistence harvest of sockeye salmon in the Pilgrim River has been by seine. All net fishing was closed on July 22 because sockeye passage was decreasing daily and less than half the low end of the escapement goal range (6,800—36,000) had been reached.

At the Pilgrim River weir, all salmon species escapement counts were below almost all previous years since the project began in 2003. High water prevented counting for 11 days from July 29 through August 8 and the project was pulled on August 13. Cumulative escapement counts were 13 king, 2,618 chum, 749 pink, 3,721 sockeye and 59 coho salmon (Table 4).

ESCAPEMENT

Table 4 summarizes escapement assessments for the major index river systems of the Norton Sound and Port Clarence Districts in 2021. These assessments were often qualitative and relative to historical escapement sizes. High water prevented salmon runs from being fully counted and few escapement goal ranges were likely reached for salmon other than pink salmon.

Department salmon counting projects in Norton Sound in 2021 included a counting tower on the Kwiniuk River and weirs on the Nome River and Solomon River. The Unalakleet River weir is cooperative project between the department and NSEDC with funding from United States Fish and Wildlife Service - Office of Subsistence Management. Seven additional salmon counting projects were also operated this season. The Eldorado, Snake and Pilgrim Rivers had weir projects and the Inglutalik, North, Shaktoolik and Ungalik Rivers had counting towers that are operated by NSEDC.

There were few aerial surveys this year because of limited aircraft availability and high-water conditions.

Table 1. Norton Sound Salmon Catch and Dollar Value, 1961-2021.

Year	Total Catch	Number of Permits	Gross Value of Catch to Permit Holders
1961	101,711	a	a
1962	232,431	a	\$105,800
1963	224,378	a	\$104,000
1964	164,671	a	\$51,000
1965	39,203	a	\$21,483
1966	100,345	a	\$68,000
1967	74,818	a	\$44,038
1968	124,409	a	\$63,700
1969	178,972	a	\$95,297
1970	178,218	a	\$99,019
1971	141,977	a	\$101,000
1972	149,494	a	\$102,225
1973	176,797	a	\$308,740
1974	315,829	a	\$437,127
1975	251,861	a	\$413,255
1976	193,063	a	\$285,283
1977	257,325	164	\$546,010
1978	531,948	176	\$907,330
1979	350,401	175	\$878,792
1980	444,337	159	\$572,125
1981	441,734	167	\$761,658
1982	511,208	164	\$1,069,723
1983	456,420	170	\$946,232
1984	342,159	141	\$738,064
1985	180,200	155	\$818,477
1986	230,400	163	\$546,452
1987	136,283	164	\$517,894
1988	225,132	152	\$760,641
1989	92,811	110	\$319,489
1990	131,665	128	\$474,064
1991	156,789	126	\$413,479
1992	199,933	110	\$448,395
1993	263,670	153	\$368,723
1994	1,108,184	119	\$863,060
1995	181,393	105	\$356,164
1996	571,241	86	\$340,347
1997	79,141	102	\$363,908
1998	641,396	82	\$358,982
1999	23,051	60	\$76,860
2000	217,873	79	\$149,907
2001	30,849	51	\$56,921
2002	2,365	12	\$2,941
2003	20,653	30	\$64,473
2004	48,381	36	\$122,506
2005	89,669	40	\$296,154

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Year	Total Catch	Number of Permits	Gross Value of Catch to Permit Holders
2006	140,873	61	\$389,707
2007	152,357	71	\$572,195
2008	221,101	91	\$759,451
2009	138,737	88	\$722,167
2010	211,622	115	\$1,220,487
2011	177,167	123	\$1,269,730
2012	305,657	123	\$758,908
2013	181,247	124	\$1,183,236
2014	403,715	128	\$1,915,749
2015	369,720	128	\$1,940,408
2016	366,236	141	\$1,237,229
2017	378,561	139	\$2,788,316
2018	543,714	149	\$4,001,400
2019	381,124	145	\$2,078,034
2020	50,679	124	\$290,302
2021	303,983	131	\$444,772
5-year avg. ^b	344,063	140	2,079,056
10-year avg. ^c	315,782	132	\$1,746,331

^a Information not available.

^b 2016-2020.

^c 2011-2020.

Table 2.—Norton Sound commercial salmon harvest summary by subdistrict, 2021.

		Subdistricts						Total
		1	2	3	4	5	6	
Number of Permit Holders		7	11	18	9	26	63	131
King	Number	2	1	1	0	5	6	15
	Weight (lbs)	12	7	10		54	86	169
Sockeye	Number	26	142	41	8	150	106	473
	Weight (lbs)	148	703	225	46	772	556	2,450
Coho	Number	408	707	883	166	2,593	2,432	7,189
	Weight (lbs)	2,406	4,259	5,167	1,005	14,852	13,509	41,198
Pink	Number	0	18,395	6,601	14,190	80,735	169,991	289,912
	Weight (lbs)		38,867	15,490	37,148	217,113	493,369	801,987
Chum	Number	250	3,515	452	45	1,237	895	6,394
	Weight (lbs)	1,483	18,562	2,255	267	7,225	5,085	34,877
Total ^b	Number	686	22,760	7,978	14,409	84,720	173,430	303,983
	Weight (lbs)	4,049	62,398	23,147	38,466	240,016	512,605	880,681

^a Total number of permit holders is not the sum of permit holders in each subdistrict because some permit holders fished in more than one subdistrict.

^b Total does not include 1 king, 18 sockeyes, 13 cohos, 61 pinks and 16 chums retained for personal use.

Table 3. Norton Sound Salmon Catch, 1961-2021.

Year	King	Sockeye	Coho	Pink	Chum	Total
1961	5,300	35	13,807	34,237	48,332	101,711
1962	7,286	18	9,156	33,187	182,784	232,431
1963	6,613	71	16,765	46,180	154,749	224,378
1964	2,018	126	98	13,567	148,862	164,671
1965	128	30	2,030	220	36,795	39,203
1966	1,553	14	5,755	12,778	80,245	100,345
1967	1,804	0	2,379	28,879	41,756	74,818
1968	1,045	0	6,885	71,179	45,300	124,409
1969	2,392	0	6,836	86,949	82,795	178,972
1970	1,853	0	4,423	64,908	107,034	178,218
1971	2,593	0	3,127	4,895	131,362	141,977
1972	2,938	0	454	45,182	100,920	149,494
1973	1,918	0	9,282	46,499	119,098	176,797
1974	2,951	0	2,092	148,519	162,267	315,829
1975	2,393	2	4,593	32,388	212,485	251,861
1976	2,243	11	6,934	87,919	95,956	193,063
1977	4,500	5	3,690	48,675	200,455	257,325
1978	9,819	12	7,335	325,503	189,279	531,948
1979	10,706	57	31,438	167,411	140,789	350,401
1980	6,311	40	29,842	227,352	180,792	444,337
1981	7,929	56	31,562	232,479	169,708	441,734
1982	5,892	10	91,690	230,281	183,335	511,208
1983	10,308	27	49,735	76,913	319,437	456,420
1984	8,455	6	67,875	119,381	146,442	342,159
1985	19,491	166	21,968	3,647	134,928	180,200
1986	6,395	233	35,600	41,260	146,912	230,400
1987	7,080	207	24,279	2,260	102,457	136,283
1988	4,096	1,252	37,214	74,604	107,966	225,132
1989	5,707	265	44,091	123	42,625	92,811
1990	8,895	434	56,712	501	65,123	131,665
1991	6,068	203	63,647	0	86,871	156,789
1992	4,541	296	105,418	6,284	83,394	199,933
1993	8,972	279	43,283	157,574	53,562	263,670
1994	5,285	80	102,140	982,389	18,290	1,108,184
1995	8,860	128	47,863	81,664	42,898	181,393
1996	4,984	1	68,206	487,441	10,609	571,241
1997	12,573	161	32,284	20	34,103	79,141
1998	7,429	7	29,623	588,013	16,324	641,396
1999	2,508	0	12,662	0	7,881	23,051
2000	752	14	44,409	166,548	6,150	217,873
2001	213	44	19,492	0	11,100	30,849
2002	5	1	1,759	0	600	2,365
2003	12	21	17,060	0	3,560	20,653
2004	22	47	42,016	0	6,296	48,381
2005	151	12	85,523	0	3,983	89,669

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Year	King	Sockeye	Coho	Pink	Chum	Total
2006	20	3	130,808	0	10,042	140,873
2007	19	2	126,136	3,769	22,431	152,357
2008	83	60	120,309	75,525	25,124	221,101
2009	84	126	87,041	17,364	34,122	138,737
2010	140	103	62,079	31,557	117,743	211,622
2011	185	369	58,917	7,141	110,555	177,167
2012	197	134	37,056	205,498	62,772	305,657
2013	151	247	53,802	8,338	118,709	181,247
2014	289	519	112,756	182,406	107,745	403,715
2015	1,288	4,119	153,928	62,888	147,497	369,720
2016	321	2,888	102,890	208,961	51,176	366,236
2017	538	2,975	191,254	20,321	163,473	378,561
2018	906	3,623	260,707	40,449	238,029	543,714
2019	1,371	6,969	139,820	75,929	157,035	381,124
2020	906	1,808	14,650	6,950	26,365	50,679
2021	15	473	7,189	289,912	6,394	303,983
5-year avg. ^a	808	3,653	141,864	70,522	127,216	344,063
10-year avg. ^b	615	2,365	112,578	81,888	118,336	315,782

^a 2016-2020^b 2011-2020

Table 4.—Salmon counts of rivers and associated salmon escapement goal ranges
Norton Sound and Port Clarence Districts, 2021.

Stream	King Salmon			Chum Salmon		
	Weir/ Tower Count	Escapement Goal Range	Aerial Survey Count ^a	Weir/ Tower Count	Escapement Goal Range	Aerial Survey Count ^a
Salmon L.						
Grand Central R.						
Pilgrim R.	13			2,618		
Glacial L.						
Sinuk R.						
Cripple R.						
Penny R.						
Anvil Creek						
Snake R.	5			619	2,000 - 4,200	
Nome R.	2			216	1,600 - 5,300	
Flambeau R.						
Eldorado R.	15			6,283	4,400 - 14,200	
Bonanza R.						
Solomon R.	3			90		
Fish R.						
Boston Cr.						
Niukluk R.						
Ophir Cr.						
Kwiniuk R.	219	250		3,681	9,100 - 32,600	
Tubutulik R.					3,100 - 9,900	
Ungalik R.	321			16,132		
Inglutalik R.	252			3,123		
Shaktoolik R.	933			8,706		
Unalakleet R.	497			14,410		
Old Woman R.						
North R.	825	1,200-2,600		804		

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Stream	Coho Salmon			Sockeye Salmon			Pink Salmon		
	Weir/ Tower Count	Aerial Survey Count ^a	Escapement Goal Range	Weir/ Tower Count	Escapement Goal Range	Aerial Survey Count ^a	Weir/ Tower Count	Escapement Goal Range	Aerial Survey Count ^a
<u>Salmon L.</u>									
<u>Grand Central R.</u>									
Pilgrim R.	59			3,721	6,800-36,000		749		
Glacial L.					800 - 1,600				
Sinuk R.									
Cripple R.									
Penny R.									
Anvil Creek									
Snake R.	79	885		62		337	5,275		
Nome R.	1	378		6		61	4,615	3,200	
Flambeau R.									
Eldorado R. ^b	10			52			5,467		
Bonanza R.									
Solomon R.	5			0			3,605		
Fish R.									
Boston Cr.									
Niukluk R.			Combined						
Ophir Cr.			750-1,600						
Kwiniuk R.	1,347		650-1,300	72			56,724	8,400	
Tubutulik R.									
Ungalik R.	3			4,413			618,721		
Inglutalik R.	10			52			207,654		
Shaktoolik R.	579			99			701,982		
Unalakleet R.	1,680			1,311					
Old Woman R.									
North R.	204		550-1,100	6			351,732	25,000	

Note: Data not available for all streams. Sustainable escapement goal (SEG) and optimal escapement goal (OEG) are listed.

^a All aerial surveys are rated fair to good, unless otherwise noted.