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Advisory Announcement

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2023 NORTON SOUND SALMON SEASON SUMMARY

COMMERCIAL SALMON FISHERY

In 2023, Norton Sound salmon returns were below average. Northern Norton Sound subdistricts in general met their escapement objectives for chum and pink salmon, except chum salmon in the Kwiniuk River. In southern Norton Sound subdistricts, Chinook, chum, pink, and coho escapements were weak and escapement goals were generally not met. Throughout Norton Sound pink salmon returns were below average for an odd-numbered year and well below the record runs of the last three odd-numbered years. Chum and coho salmon harvests were approximately half of last year's harvest and well below the recent 5-year average harvest. In southern Norton Sound there was buyer interest to commercially harvest pink salmon; however, there was little harvestable surplus available beyond escapement and subsistence needs. This summary contains preliminary numbers and will be updated in subsequent reports.

Table 1 lists the Norton Sound salmon current year and historical commercial salmon harvests, effort, and ex-vessel value. The 2023 commercial harvest of all salmon species was 25,096 fish and was the lowest since the late 1990s and early 2000s. Weak runs of chum and coho salmon combined with poor pink salmon returns resulted in the low 2023 salmon harvest. There were 83 commercial permit holders that fished in 2023, well below the recent 5-year average of 131 permits. The 2023 fishery value of \$115,762 was the lowest value since the poor runs of the early 2000s.

Table 2 lists salmon harvests by species, number, and weight in each subdistrict in 2023. The 2023 chum salmon catch was 15,693 fish and was 17% of the recent 5-year average of 91,818 fish (Table 3). The coho salmon catch of 5,426 fish was the poorest harvest since 2002 and well below the recent 5-year average of 87,166 fish (Table 3).

Only one salmon buyer operated in Norton Sound in 2023, Norton Sound Seafood Products (NSSP) with the Unalakleet processing plant being the buyer's main base of operations. NSSP also processed some of the commercial catch at their plant in Nome in addition to a processing vessel during July. Prices paid per pound in 2023 were \$2.20 for sockeye salmon, \$1.40 for coho salmon, \$0.60 for chum salmon, and \$0.35 for pink salmon. Sockeye, coho, and chum salmon prices decreased from 2022 prices and were \$0.10 less for sockeye, \$0.80 less for coho, and \$0.35 less for chum salmon. Pink salmon price was the same as the market in 2022. King salmon were not purchased by NSSP in 2023.

SUBSISTENCE SALMON FISHERY

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

The only places that have limits on subsistence salmon harvest are in the Nome Subdistrict, Pilgrim River, and Salmon Lake. Subsistence permits are important to management because they identify participants and harvests; however, the actual catch information cannot be compiled 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

There were 12 commercial fishing periods and 6 permit holders fished. Fishing periods were scheduled on a weekly basis of two 48-hour periods per week once it was projected that chum salmon escapement at Eldorado River weir would exceed the lower end of the escapement goal range. All commercial fishing periods had gillnets restricted to 6 inches or smaller mesh size. This schedule continued until management transitioned to coho salmon. Lagging escapement counts and mediocre harvest rates for coho salmon caused the department to reduce fishing time to allow for more escapement and subsistence opportunity. Catches were approximately half of last year's harvest and well below previous years. The commercial harvest was 35 sockeye, 1,552 chum, 28 pink and 738 coho salmon (Table 2).

The pink salmon run was below average for an odd-numbered year and well below the record runs in odd-year runs from the late 2010s. Chum and coho salmon runs were below average when compared to recent years (Table 3).

The chum salmon escapement goals at Eldorado River (4,400–14,200), Nome River (1,600–5,300) and Snake River (2,000–4,200) were achieved (Table 4). Weir operations on the Nome and Snake Rivers were hampered in 2023 by numerous high-water events that caused missed passage at those projects. Coho salmon passages were below average when high water events caused the weirs to become inoperable. The pink salmon passage of 2,827 fish at Nome River was below the odd-numbered year escapement goal of 3,200 fish. Although no estimates for missed pink salmon passage were generated; due to the amount of missed passage at the Nome River weir during the peak of the pink salmon run it is assumed that the escapement goal was obtained.

Golovin - Subdistrict 2

There were 9 commercial fishing periods directed at chum or coho salmon with gillnets restricted to 6 inches or smaller mesh size. The 17 permit holders that fished this year was more than the 11 permits that fished last year but near the historical average of 15. Initial catch rates in the commercial fishery were nearly twice the recent 5-year average and remained high throughout the season for chum salmon. Commercial fishing in Subdistrict 2 was placed on a schedule of one 48-hour period per week throughout the directed chum salmon fishery. The department managed the chum fishery in Subdistrict 2 conservatively by restricting fishing to only one period per week because high water limited the ability of the counting tower on the Niukluk River to successfully operate. The commercial harvest was 174 sockeye, 11,037 chum, 351 pink, and 574 coho salmon (Table 2).

The Niukluk River counting tower was operational for the second consecutive year since the project was discontinued in 2012. Escapement counts were 63 king, 6,045 chum, 5,715 pink, 18 sockeye, and 714 coho salmon (Table 4). High water events plagued the Niukluk River tower in 2023 causing counting to be delayed by three weeks and multiple days of missed or incomplete passage estimates; thus, escapement estimates for the Niukluk River should be viewed as minimum escapements.

Elim - Subdistrict 3

There were 10 commercial fishing periods targeting chum or coho salmon with gillnets restricted to 6 inches or smaller mesh size. The 14 permit holders fishing was less than the 15 permit holders last year and well below the 25 to 34 permit holders that fished from 2014–2020. The initial commercial opening was based on an aerial survey, strong initial tower passage, and the run strength of recent returns. Commercial harvest rates were lackluster and escapement counts at the Kwiniuk River tower began to lag behind expectations, causing the department to pause commercial fishing on chum salmon to allow for additional escapement and subsistence opportunity. Commercial fishing resumed when coho salmon escapement estimates at the Kwiniuk River tower indicated there was a surplus available for commercial harvest. Subdistrict 3 was opened for two 48-hour periods per week. The commercial harvest was 29 sockeye, 1,101 chum, 19 pink, and 1,210 coho salmon.

Escapement counts at the Kwiniuk River tower were 15 king, 3,660 chum, 18,711 pink, 18 sockeye, and 5,445 coho salmon (Table 4). High water early in the season delayed the operations of the tower by nearly 3 weeks compared to the target starting date of June 15. Additionally, high water events impacted the Kwiniuk River tower's ability to enumerate fish during the season, although it was not hampered to the same degree as other projects in Norton Sound. King salmon passage was below the escapement goal of 250 fish for the third year in a row. Chum salmon passage was below the escapement goal range of 9,100–32,600. An aerial survey was flown soon after the tower had begun operating and 1,910 chum salmon were counted in good survey conditions. The pink salmon escapement goal of 8,400 fish was exceeded by over 10,000 fish. The coho salmon aerial survey escapement goal range of 650–1,300 fish was assumed to be met or exceeded when 5,445 coho salmon were estimated to have passed the Kwiniuk River tower.

Norton Bay - Subdistrict 4

There were 6 commercial fishing periods, two targeting pink salmon restricted to 4½ inch mesh or less and 4 periods targeting coho salmon with gillnets restricted to 6-inch mesh or less. Subdistrict 4 was managed in conjunction with Subdistricts 5 and 6 in 2023. The commercial harvest was 1 sockeye, 23 chum, 8 pink, and 59 coho salmon which were all well below average. Effort was minimal with 4 permits fished, which is below the more typical 11 permits fished.

Counting towers on the Ungalik and Inglutalik Rivers operated in 2023 but operations were hampered by high water and both projects had minimal escapement with long periods of missed or incomplete escapement data. Escapement estimates are included in Table 4 but should be considered minimum escapement estimates.

Shaktoolik and Unalakleet - Subdistricts 5 and 6

Both Shaktoolik and Unalakleet subdistricts share a common commercial fishing boundary and management actions typically encompass both subdistricts as salmon intermingle in the marine waters of Subdistricts 5 and 6 and harvest in one subdistrict affects fish in the adjacent subdistrict.

In Shaktoolik, there were 5 commercial fishing periods with 1 pink salmon directed fishing period with gillnets restricted to 4½ inches mesh or smaller. The other 4 periods targeted coho salmon with gillnets restricted to 6 inches or smaller mesh size. In Unalakleet there were 6 commercial fishing periods with 2 pink salmon directed fishing periods with gillnets restricted to 4½ inch mesh or smaller. The other 4 periods targeted coho salmon with gillnets restricted to 6-inch mesh or less. In 2023, Shaktoolik had one fewer pink salmon commercial opening compared to Unalakleet because catch rates for pink salmon in the initial commercial opening were extremely poor indicating there was not a harvestable surplus in the marine waters of Shaktoolik to justify additional commercial openings for pink salmon. Poor king, chum, and pink salmon runs in both the Shaktoolik and Unalakleet subdistricts caused the department to forgo additional commercial salmon openings to allow for additional escapement and subsistence opportunity in those subdistricts. Openings resumed the first week of August to target coho salmon. The department closed subsistence fishing in the freshwaters of the Shaktoolik and Unalakleet subdistricts and allowed only limited subsistence fishing in the marine waters of both districts restricted to 6-inch mesh or less in an attempt to bolster escapements.

There were 12 permit holders that fished in the Shaktoolik Subdistrict, 10 less than fished last year. In Unalakleet there were 34 permit holders, 15 less than fished last year. The Shaktoolik commercial harvest was 58 sockeye, 5,955 chum, 477 pink and 954 coho salmon. The Unalakleet commercial harvest was 67 sockeye, 1,026 chum, 2,730 pink and 1,891 coho salmon (Table 2).

The Shaktoolik chum salmon catch of 954 fish was well below last year and was below the harvests of the 2010s that ranged from over 20,000 to 43,000 fish. The Unalakleet chum salmon catch experienced a similar trend as Shaktoolik in that 1,026 fish was well below last year's harvests and below the harvests of the 2010s that ranged from over 12,000 to 108,000 fish. This year's Shaktoolik catch of 954 coho salmon was the smallest harvest of coho salmon since 2002. Likewise, the Unalakleet coho salmon harvest of 1,891 was the lowest harvest since 2002.

The Shaktoolik River counting tower started operations on June 26. However, due to high, turbid water the tower had missed or incomplete passage estimates for 27 days. The North River tower was operational on June 24 and operated more consistently than other projects in southern Norton Sound with only 9 days of missed or incomplete escapement estimates. The Unalakleet River weir was operational on June 30, approximately two weeks late because water levels early in the season did not allow for the safe installation of the weir and there were 14 days of missed or incomplete escapement counts during the season. The North River king salmon escapement of 483 fish was well below the lower end of the escapement goal range of 1,200–2,600 fish (Table 4) and the lowest escapement on record. Pink salmon escapements in the Shaktoolik and North Rivers were poor. Both Shaktoolik River and Unalakleet River projects escapement estimates should be viewed as minimal escapement as both projects had significant missed or incomplete passage data.

Port Clarence District

Port Clarence District has the largest run of sockeye salmon in the region. 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 when returns exceed escapement needs. In 2023, in anticipation of a small sockeye salmon return, net fishing was closed June 15 in an attempt to ensure escapement was met. The 2023 sockeye run was one of the poorest runs on record and despite the closure to net fishing the weir count of 1,679 sockeye salmon was the third lowest in the 20-year project history. The count was less than one-quarter of the lower bound of the escapement goal range of 6,800–36,000 fish and marks the third consecutive year the Pilgrim River did not meet the escapement goal.

Table 1. Norton Sound Salmon Catch and Dollar Value, 1961-2023.

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	303,999	131	\$451,815
2022	130,207	108	\$465,972
2023	25,096	83	\$115,762
5-year avg. ^b	281,945	131	1,457,505
10-year avg. ^c	310,920	132	\$1,635,246

^a Information not available.

^b 2018-2022.

^c 2013-2022.

Table 2.—Norton Sound commercial salmon harvest summary by subdistrict, 2023.

		Subdistricts						Total
		1	2	3	4	5	6	
Number of Permit Holders		6	17	14	6	12	34	83
King	Number							0
	Weight (lbs)							
Sockeye	Number	35	174	29	1	58	67	364
	Weight (lbs)	220	1,051	178	7	341	386	2,183
Coho	Number	738	574	1,210	59	954	1,891	5,426
	Weight (lbs)	4,567	3,320	6,931	359	5,393	11,001	31,571
Pink	Number	28	351	19	8	477	2,730	3,613
	Weight (lbs)	93	1,060	53	17	1,113	7,962	10,298
Chum	Number	1,552	11,037	1,101	23	954	1,026	15,693
	Weight (lbs)	10,605	74,090	7,236	143	5,955	6,314	104,343
Total ^b	Number	2,353	12,136	2,359	91	2,443	5,714	25,096
	Weight (lbs)	15,485	79,521	14,398	526	12,802	25,663	148,395

^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 21 kings, 38 sockeyes, 58 cohos, 2 pinks and 7 chums retained for personal use.

Table 3. Norton Sound Salmon Catch, 1961-2023.

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	6,410	303,999
2022	0	1,233	13,464	84,261	31,249	130,207
2023	0	364	5,426	3,613	15,693	25,096
5-year avg. ^a	640	2,821	87,166	99,500	91,818	281,945
10-year avg. ^b	579	2,485	105,046	98,042	104,769	310,920

^a 2018-2022^b 2013-2022

Table 4.–Salmon counts of rivers and associated salmon escapement goal ranges
Norton Sound and Port Clarence Districts, 2023.

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.	12			7,142		
Glacial L.						
Sinuk R.						10
Cripple R.						
Penny R.						
Anvil Creek						
Snake R.	2			3,394	2,000-4,200	170 ^c
Nome R.	1			1,494	1,600-5,300	390 ^c
Flambeau R.						
Eldorado R.	10			8,084	4,400-14,200	
Bonanza R.						470
Solomon R.						
Fish R.						
Boston Cr.						
Niukluk R. ^d	63		10	6,045		7,110
Ophir Cr.						
Kwiniuk R.	15	250		3,660	9,100-32,600	1,910 ^c
Tubutulik R.					3,100-9,900	
Ungalik R.	66			4,803		
Inglutalik R.	204			1,788		
Shaktoolik R.	759			5,031		160
Unalakleet R.	40		33	13,358		2,310
Old Woman R.			37			300
North R.	483	1,200-2,600	163	597		360

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Table 4.—Page 2 of 2.

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.	0			1,656	6,800-36,000	10 ^c	669		
Glacial L.					800-1,600	200			
Sinuk R.			110			380			138
Cripple R.									
Penny R.									
Anvil Creek									
Snake R.	92			9			3,394		700 ^c
Nome R.	371			2			2,827	3,200	980 ^c
Flambeau R.									
Eldorado R. ^b	3			20			502		
Bonanza R.		20				120			1,500
Solomon R.									
Fish R.									
Boston Cr.									
Niukluk R. ^d	714	75 ^b	Combined	18		1,000	5,715		15,000
Ophir Cr.		143	750-1,600			37			
Kwiniuk R.	5,445		650-1,300	18			18,711	8,400	
Tubutulik R.									
Ungalik R.	372						15,441		
Inglutalik R.							192		
Shaktoolik R.	1,590			81			29,247		16,000
Unalakleet R.	4,805			165					
Old Woman R.									
North R.	597		550-1,100				11,198	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.

^b Murky water creating very poor conditions.

^c Surveys conducted to assess missed passage prior to project installation.

^d Includes counts from Casadepaga River.