

2015 Norton Sound Salmon Fisheries Outlook and Management Strategies

by

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May 2015

Alaska Department of Fish and Game

Division of Commercial Fisheries



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Weights and measures (metric)		General		Measures (fisheries)	
centimeter	cm	Alaska Administrative		fork length	FL
deciliter	dL	Code	AAC	mid-eye-to-fork	MEF
gram	g	all commonly accepted		mid-eye-to-tail-fork	METF
hectare	ha	abbreviations	e.g., Mr., Mrs., AM, PM, etc.	standard length	SL
kilogram	kg			total length	TL
kilometer	km	all commonly accepted			
liter	L	professional titles	e.g., Dr., Ph.D., R.N., etc.	Mathematics, statistics	
meter	m			<i>all standard mathematical</i>	
milliliter	mL	at	@	<i>signs, symbols and</i>	
millimeter	mm	compass directions:		<i>abbreviations</i>	
		east	E	alternate hypothesis	H _A
		north	N	base of natural logarithm	<i>e</i>
		south	S	catch per unit effort	CPUE
		west	W	coefficient of variation	CV
		copyright	©	common test statistics	(F, t, χ^2 , etc.)
		corporate suffixes:		confidence interval	CI
		Company	Co.	correlation coefficient	
		Corporation	Corp.	(multiple)	R
		Incorporated	Inc.	correlation coefficient	
		Limited	Ltd.	(simple)	r
		District of Columbia	D.C.	covariance	cov
		et alii (and others)	et al.	degree (angular)	°
		et cetera (and so forth)	etc.	degrees of freedom	df
		exempli gratia		expected value	<i>E</i>
		(for example)	e.g.	greater than	>
		Federal Information		greater than or equal to	≥
		Code	FIC	harvest per unit effort	HPUE
		id est (that is)	i.e.	less than	<
		latitude or longitude	lat. or long.	less than or equal to	≤
		monetary symbols		logarithm (natural)	ln
		(U.S.)	\$, ¢	logarithm (base 10)	log
		months (tables and		logarithm (specify base)	log ₂ , etc.
		figures): first three		minute (angular)	'
		letters	Jan,...,Dec	not significant	NS
		registered trademark	®	null hypothesis	H ₀
		trademark	™	percent	%
		United States		probability	P
		(adjective)	U.S.	probability of a type I error	
		United States of		(rejection of the null	
		America (noun)	USA	hypothesis when true)	α
		U.S.C.	United States	probability of a type II error	
			Code	(acceptance of the null	
		U.S. state	use two-letter	hypothesis when false)	β
			abbreviations	second (angular)	"
			(e.g., AK, WA)	standard deviation	SD
				standard error	SE
				variance	
				population	Var
				sample	var
Weights and measures (English)					
cubic feet per second	ft ³ /s				
foot	ft				
gallon	gal				
inch	in				
mile	mi				
nautical mile	nmi				
ounce	oz				
pound	lb				
quart	qt				
yard	yd				
Time and temperature					
day	d				
degrees Celsius	°C				
degrees Fahrenheit	°F				
degrees kelvin	K				
hour	h				
minute	min				
second	s				
Physics and chemistry					
all atomic symbols					
alternating current	AC				
ampere	A				
calorie	cal				
direct current	DC				
hertz	Hz				
horsepower	hp				
hydrogen ion activity	pH				
(negative log of)					
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

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**2015 NORTON SOUND SALMON FISHERIES OUTLOOK
AND MANAGEMENT STRATEGIES**

by
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ABSTRACT

This report provides the expected 2015 run outlooks, management issues, and harvest strategies for Norton Sound salmon fisheries. Commercial and subsistence salmon fisheries occur in Norton Sound and the area is comprised of two fishing districts, the Norton Sound District and the Port Clarence District. The Norton Sound District extends from Cape Douglas south to Point Romanof and includes over 500 miles of coastline. The area open to commercial salmon fishing is divided into six subdistricts. Each subdistrict contains at least one major spawning stream with commercial fishing effort located in the ocean often near stream mouths. The Port Clarence District encompasses all waters from Cape Douglas north to Cape Prince of Wales. In Port Clarence District, commercial fishing may only occur near the villages of Teller and Brevig Mission. Management strategies may change inseason based upon assessment of Chinook *Oncorhynchus tshawytscha*, chum *O. keta*, sockeye *O. nerka*, pink *O. gorbuscha*, and coho *O. kisutch* salmon runs.

Key words: Norton Sound, Port Clarence, Chinook, *Oncorhynchus tshawytscha*, chum, *O. keta*, sockeye, *O. nerka*, pink, *O. gorbuscha*, coho, *O. kisutch*, outlook, subsistence, commercial, fishing, strategy, management plan.

INTRODUCTION

Norton Sound is comprised of two fishing districts, the Norton Sound District and the Port Clarence District (Figure 1). The Norton Sound District extends from Cape Douglas south to Point Romanof and includes over 500 miles of coastline. The area open to commercial salmon fishing is divided into six subdistricts. Each subdistrict contains at least one major spawning stream with commercial fishing effort located in the ocean near stream mouths. The Port Clarence District encompasses all waters from Cape Douglas north to Cape Prince of Wales. The commercial salmon fishing area is adjacent to the communities of Brevig Mission and Teller (Figure 2).

Alaska Department of Fish & Game (ADF&G, department) staffing for salmon management within Norton Sound includes three permanent biologists, a program technician and 20 seasonal employees during the summer months. Norton Sound Economic Development Corporation (NSEDC) funds 21 interns to work on department projects and cooperative projects between NSEDC and ADF&G. Anticipated department management projects in 2015 include: Kwiniuk River counting tower; Nome River weir; Solomon River weir; periodic aerial surveys of index spawning streams; and catch sampling and monitoring efforts at Unalakleet. Cooperative projects with other agencies will occur at the Unalakleet River weir (U.S. Department of the Interior Bureau of Land Management (BLM), NSEDC and Native Village of Unalakleet (Unalakleet IRA); Fish River tower (NSEDC); Snake River weir (NSEDC); and Glacial Lake weir (NSEDC). Department staff will also track the salmon escapement counts reported on other cooperative projects administered by NSEDC on the following rivers: North, Shaktoolik, Inglutalik, Eldorado, and Pilgrim.

2015 RUN OUTLOOK

Salmon outlooks and harvest projections for the 2015 salmon season are based on qualitative assessments of parent-year escapements, sibling relationships, subjective determinations of freshwater overwintering and ocean survival, and in the case of the commercial fishery, the projections of local market conditions. The Chinook salmon run is expected to be weak and no commercial fishing targeting Chinook salmon is expected in Norton Sound. Additional subsistence restrictions for Chinook salmon are expected in southern Norton Sound. Chum salmon runs are expected to be average and the harvest is expected to be 70,000 to 100,000 fish. The department expects the pink salmon run to be average for an odd-numbered year and the

harvest could range from 25,000 to 75,000 fish. A harvest of this magnitude would be dependent on pink salmon directed fishing periods and sufficient buyer interest. The department has emergency order authority to increase allowable commercial gillnet gear from 100 fathoms to 200 fathoms in a pink salmon directed fishery. The coho salmon run is expected to be average based on ocean survival conditions in recent years. The commercial harvest is expected to be 60,000 to 90,000 fish. In the Port Clarence District the department expects the commercial fishery to remain closed and there could be subsistence closures in the Pilgrim River as early as the second week of July to protect the sockeye salmon run.

MANAGEMENT STRATEGIES

Department staff will manage salmon fisheries to ensure escapement goals are achieved. Subsistence fishing may need to be restricted or closed if concerns for escapement arise. Commercial fishing will be allowed if a market is available and if it does jeopardize escapement or reasonable opportunity for subsistence fishing. Periodically, informational updates will be broadcast over Nome public radio stations to inform fishermen of current regulations, catches, escapements and ADF&G activities. Also, biologists will attempt to visit each fishery to disseminate fishery information and answer questions. The Unalakleet office will be open daily, except Sunday, throughout the season beginning the first week of June. The Unalakleet office number is 624-3921. The public may also call the Nome office toll-free number at 1-800-560-2271 or the regular number of 443-5167 for information.

NOME SUBDISTRICT

Subdistrict 1 (Nome) salmon management in 2015 is expected to be similar to last year. However, an increase in commercial fishing time is expected with the possibility of fishing periods beginning in early July. Since Tier II chum salmon subsistence fishing was suspended in 2006, the subdistrict-wide escapement goal range of 23,000 to 35,000 fish has been reached or exceeded in all years except in 2009. In the last five years the escapement has ranged from 52,000 to 108,000 fish. Three rivers have chum salmon escapement goal ranges, Eldorado (6,000 to 9,200), Nome (2,900 to 4,300) and Snake (1,600 to 2,500). The range has been exceeded at Eldorado River the last five years, met or exceeded at Nome River four out of the last five years and exceeded at the Snake River four out of the last five years.

In marine waters, subsistence fishing is allowed 7 days a week prior to June 15 and after August 15. From June 15 through July 25 the marine waters of Nome Subdistrict, west of Cape Nome, will be open to set gillnet fishing from 6 p.m. Wednesday until 6 p.m. Saturday and from July 26 through August 15 will be open from 6 p.m. Monday until 6 p.m. Saturday unless closed by emergency order. Marine waters east of Cape Nome will remain open 7 days a week throughout the season unless closed by emergency order. In fresh waters, subsistence fishing is open 7 days a week prior to June 15 and after August 31. Beginning June 15 through August 31, subsistence set gillnet fishing will be open in fresh waters from 6 p.m. Monday until 6 p.m. Wednesday and from 6 p.m. Thursday until 6 p.m. Saturday. Subsistence permits are required when subsistence salmon fishing. All state residents are eligible to receive a subsistence permit. The fishing schedule listed above will be in effect unless reduced or closed by emergency order because of weaker than expected salmon runs. There is the possibility of extensions to fishing time in the marine waters west of Cape Nome if high surf conditions limit fishing opportunity or if escapement goal ranges are projected to be reached in Nome and Snake rivers. Beach seining is allowed during gillnet fishing periods from June 15 through July 25.

Stream-specific harvest limits are listed on the subsistence salmon fishing permits. There are no catch limits in marine waters. Permit catch limits for Nome Subdistrict and Port Clarence District streams are listed in Table 2.

The department will use the Eldorado River weir counts as the primary indicator of chum salmon run strength in Nome Subdistrict east of Cape Nome. If Eldorado River chum salmon escapement begins to lag behind historical run timing curves and indicates the escapement goal range will not be met, marine and river fishing periods may be reduced or suspended until the action is of little benefit to chum salmon and the department switches to other salmon species management. The Eldorado River chum salmon escapement is expected to be met in 2015 and daily escapement counts from the weir will be used to confirm that the run is tracking as expected. If the escapement goal range is projected to be achieved the department will consider commercial fishing openings east of Cape Nome. Aerial surveys will be used to index escapement to the Flambeau and Bonanza rivers. If aerial survey counts show escapements to be lagging, then freshwater fishing periods in these systems may be suspended.

The department will use the Nome River and Snake River escapement counts as an indicator of chum salmon run strength in the Nome Subdistrict west of Cape Nome. If the Nome River and Snake River weir counts project that the chum salmon escapement goal range will not be reached, marine and freshwater subsistence fishing periods may be restricted or suspended. The Cripple and Penny rivers are closed by regulation to subsistence chum salmon fishing. The Sinuk River is expected to have a good chum salmon run in 2015, but the sockeye salmon run is expected to be below average.

Commercial fishing periods are expected in Nome Subdistrict for chum salmon and possibly pink salmon if there is buyer interest. Also, there is the possibility for commercial fishing for coho salmon in August depending on run strength. By regulation commercial fishing periods for salmon will be 24 hours or less in duration and mesh size will be restricted depending on the target species. Directed fishing periods for chum salmon will have gear restricted to a maximum mesh size of 6 inches and for pink salmon to a maximum mesh size of 4 ½ inches.

GOLOVIN SUBDISTRICT

Low chum salmon runs and a lack of markets kept Subdistrict 2 (Golovin) closed to commercial chum salmon fishing for most of the first decade of the 2000s. Although good commercial chum salmon fishing occurred in 2010 and 2011, runs of chum salmon in 2012 and 2013 were poor, but did improve last year. The chum run is expected to be similar to last year with commercial fishing time expected in July if run strength comes in as expected

The Niukluk River tower project is no longer operational, but a new counting tower project initiated by NSEDC did operate on the Fish River downstream of the confluence of the Niukluk River in 2014. The department plans to use salmon escapement counts from the project this year as an index to compare with other salmon run assessments to determine if commercial fishing time is warranted. If the Fish River project proves to be an accurate assessment over several generations of salmon escapement the department would be able to set tower-based escapement goals. In 2014, high water resulted in only one counting tower operational the first three weeks of the season and beginning in mid-July no counting was possible because for 10 days. Therefore, Chinook, chum, coho and pink salmon tower counts were considered minimal.

If the Fish River project is again not able to accurately enumerate the salmon run, then the chum salmon escapement counts in the adjacent Subdistrict 3 will be used as an indicator of the chum salmon run in Subdistrict 2 along with a peak aerial survey count if possible. Comparing Niukluk River tower chum salmon counts (1995-2012) with Kwiniuk River tower chum salmon counts of the same year there has been agreement between both rivers achieving or not achieving their respective escapement goals in 16 of 18 years. The department will also evaluate catch per unit of effort (CPUE), if there is commercial fishing, with historical commercial fishing periods during similar dates to determine if additional fishing time is warranted. This management method is similar to management before escapement goals were established in 1999 and will be used until future escapement goals are set based on sufficient aerial survey or tower data.

Both the Fish River tower site and the former Niukluk River tower site are much farther upstream than the adjacent Subdistrict 3 counting tower on Kwiniuk River. The department historically has used the counts from Kwiniuk River tower to determine early season chum salmon openings in Subdistrict 2. Further commercial chum salmon fishing opportunity after mid-July will be dependent on sufficient chum salmon escapement determined by an aerial survey count. Also, if the Fish River tower crew is able to effectively count and differentiate salmon species the chum salmon counts will be compared with the former Niukluk River tower escapement goal of 23,000 chum salmon to determine if that goal would have been met. Last decade, a three-year chum salmon tagging study showed an average of one-third of the Fish River drainage escapement was in the Niukluk River.

The pink salmon run should be sufficient to allow for commercial fishing periods after mid-July and there will likely be coho salmon commercial fishing periods. Until mid-August coho commercial CPUE will be used to set commercial coho salmon fishing time. By mid-August, if the Fish River counting tower is still operational, the department will determine additional fishing time based on coho salmon escapement as estimated by the counting tower. Also, the department plans to conduct aerial surveys of Niukluk River and Ophir Creek and will compare those counts to the former aerial survey goal of 950 to 1,900 coho salmon that was established before being replaced by the Niukluk River counting tower goal of 2,400 to 7,200 coho salmon.

Permits are required when subsistence salmon fishing and no restrictions in subsistence fishing time are expected. In the last decade subsistence harvests of chum salmon have been estimated to be less than 5% of the subdistrict run and the subsistence harvest of coho salmon in the subdistrict has been estimated to be less than 15% of the run for most years.

ELIM SUBDISTRICT

Last year was the first subsistence salmon fishing restrictions to have occurred in Subdistrict 3 (Elim) in over 20 years when hook and line subsistence fishing for Chinook salmon was closed. Subsistence permits are required when subsistence salmon fishing in the Elim Subdistrict and other than the possibility of inseason Chinook salmon restrictions to achieve the Kwiniuk River tower goal, no other restrictions are expected.

Commercial fishing for chum salmon may be delayed until July or may not occur depending on escapement numbers at Kwiniuk and Tubutulik rivers, but with an expected average chum salmon run commercial fishing is expected. The pink salmon run is expected to be average for an odd-numbered year. A commercial pink salmon directed fishery can occur if subsistence needs are expected to be met and chum salmon escapement goals are projected to be achieved, or after July 6 if it is determined there is a harvestable surplus of pink salmon and that a directed pink

salmon commercial fishery will not have a significant impact on the escapement or subsistence use of chum salmon.

Directed fishing periods for chum salmon will have gear restricted to a maximum mesh size of 6 inches and for pink salmon to a maximum mesh size of 4 ½ inches. Commercial coho salmon openings in 2015 are likely depending on the expected average run strength.

NORTON BAY SUBDISTRICT

Commercial salmon fishing returned to Subdistrict 4 (Norton Bay) in 2008 after 10 years without a buyer, and commercial fishing has occurred every year since. Previously, salmon markets had not been sufficient to attract interested fishermen or buyers. Inseason escapement monitoring indices for this subdistrict were not available in previous years and the department used information from nearby subdistricts to determine if commercial fishing time was warranted along with historical CPUE comparisons. However, since 2011 NSEDC has operated a counting tower on the Inglutalik River and the department plans to use salmon escapement counts from the project as an index to compare with other projects in 2015. If the project proves to be an accurate assessment of over several generations of salmon escapement the department would be able to set tower-based escapement goals.

In the last three years there have been record commercial harvests of pink (2012), chum (2013) and coho (2014) salmon. Likewise commercial fishing salmon fishing is expected to be good in 2015, but restrictions on subsistence fishing time to protect Chinook salmon will likely be needed again and the department will consider input from fishermen at a preseason meeting in Koyuk when developing Chinook salmon management strategies for 2015.

SHAKTOOLIK AND UNALAKLEET SUBDISTRICTS

Subdistricts 5 (Shaktoolik) and 6 (Unalakleet) have been managed as one fishery because past studies have shown salmon bound for these subdistricts intermingle and that harvests in one subdistrict likely will affect the other. If there is a sufficient salmon surplus for commercial fishing, a fishery will occur, but no commercial fishing is expected for Chinook salmon because of recent poor runs and poor parent-year escapements. Chum and pink salmon will be targeted commercially depending on market interest and fishing would likely occur after June to allow more time for Chinook salmon to pass through the subdistricts. However, although unlikely, there may be the possibility of commercial fishing in June for chum salmon if the Chinook salmon run is projected to reach escapement goals with no additional subsistence fishing closures. The department will switch to coho salmon management in late July and a commercial fishery is expected.

Timing and abundance of the Chinook salmon run will be monitored using passage estimates from the Unalakleet River weir and a counting tower on the North River, an important Chinook salmon spawning tributary in the Unalakleet River drainage. The escapement goal range for the North River is 1,200–2,600 Chinook salmon and the aerial survey escapement goal range for the Unalakleet River and Old Woman River index area is 550–1,100 Chinook salmon. For a Chinook salmon directed commercial fishery to occur, the department must project an escapement of a minimum of 1,900 Chinook salmon past the North River tower.

To protect Chinook salmon the last several years there has been a subsistence fishing schedule in effect beginning mid-June in Subdistricts 5 and 6. The regular subsistence fishing schedule in the

marine waters of Shaktoolik and Unalakleet Subdistricts is from 6:00 p.m. Monday until 6:00 p.m. Wednesday and from 6:00 p.m. Thursday until 6:00 p.m. Saturday. The schedule in the Unalakleet River is from 8:00 a.m. Monday until 8:00 p.m. Tuesday and from 8:00 a.m. Friday until 8:00 p.m. Saturday. However, in recent years it has been difficult reaching the North River Chinook salmon escapement goal and the subsistence fishing schedule was suspended last year in order to make sure the Chinook salmon escapement goals were reached. For the first time since 2010 the North River escapement goal range of 1,200 to 2,600 Chinook salmon was reached last year with an escapement count of 2,328 fish. Like 2014, a combination of targeted subsistence gillnet fishing closures, mesh size restrictions, closing subsistence fishing in marine waters south and west of Black Point, and fishing period reductions will again be needed to reach the escapement goal range in 2015. As in 2013 and 2014, the department will consider input from fishermen at preseason meetings in Shaktoolik and Unalakleet when developing Chinook salmon management strategies for the 2015 season.

Based on the recent 4-year trend in run performance and sibling relationships, the 2015 Chinook salmon run to southern Norton Sound is expected to be similar to 2014. Therefore, the department is projecting there will be limited harvestable surplus of Chinook salmon, but severe conservation measures will be required to achieve escapement goals. However, the department will allow beach seines and restricted mesh gillnets for periods beginning in early July to provide opportunity for subsistence users to utilize chum and pink salmon during optimal weather periods. Regulations allow beach seines with a maximum mesh size of 4 ½ inches to be used from July 1 through August 10 to harvest salmon other than Chinook salmon.

Chum and pink salmon directed commercial fishing periods are expected in July. Because of the expected restrictions to Chinook salmon subsistence fishing, the department plans to prohibit the sale of Chinook salmon during other salmon directed fishing periods. Chum salmon runs are expected to be average to above average and pink salmon runs are expected to be average. In Subdistricts 5 and 6, the commercial chum and pink salmon fishery may occur only if it is determined there is a harvestable surplus of chum or pink salmon and that a directed chum or pink salmon commercial fishery will not have a significant impact on escapement or subsistence use of Chinook salmon. If gillnet mesh-size restrictions or subsistence fishing time is restricted in the Chinook salmon subsistence fishery, commercial chum and pink salmon fisheries will not occur prior to July 1. If Chinook salmon escapements are lagging, then other salmon directed fisheries will need to be delayed to minimize Chinook salmon harvest. Chum salmon directed fishing periods will have gear restricted to a maximum mesh size of 6 inches and pink salmon directed fishing periods will have gear restricted to a maximum mesh size of 4 ½ inches. In the chum salmon fishery only, extended fishing periods of 72 hours or greater in length are expected as early as mid-July once the bulk of the Chinook salmon run has entered the lower Shaktoolik and Unalakleet rivers. If there is sufficient run strength, coho salmon commercial fishing openings will continue to occur as they have in recent years. The coho salmon season is considered to begin July 25, or when coho salmon catches exceed chum salmon catches. Coho gear will be restricted to a maximum mesh size of 6 inches and the regular 48-hour periods will be in effect if there are no escapement concerns.

Shaktoolik Subdistrict directed chum and coho salmon fisheries may be managed somewhat differently. Recurring high surf conditions over the past several seasons have severely limited commercial fishing time in this subdistrict. Whereas Unalakleet Subdistrict will be placed on a schedule of two 48-hour commercial fishing periods a week, the department will consider

scheduling one extended period 72 hours or greater in length each week during a time of optimal weather conditions. This strategy should help maintain interest in the fishery and lead to safer fishing conditions and improved quality of fish delivered to buyers. Additionally, severe weather conditions affecting fishing should also allow sufficient numbers of chum and coho salmon to enter the Shaktoolik and Unalakleet rivers for escapement and subsistence needs.

ST. MICHAEL AND STEBBINS

Subsistence fishing is open 7 days per week with unrestricted mesh size gillnets in southern Norton Sound from Pt. Romanof to the Subdistrict 6 boundary. However, the department is projecting poor runs of Chinook salmon in the Yukon River and southern Norton Sound (Shaktoolik and Unalakleet rivers) in 2015 and there will be no commercial Chinook salmon fishing in either management area. Severe conservation measures will be required to meet escapement goals in these rivers. In order to conserve Chinook salmon for spawning escapement and future uses by fishermen, it is necessary to consider reducing harvest of Chinook salmon migrating through the St. Michael and Stebbins areas by having closures. Meetings are planned to be held in St. Michael and Stebbins during the fishing season to get input from subsistence fishermen.

PORT CLARENCE DISTRICT

The sockeye salmon run is not expected to reach the inriver goal of 30,000 fish in Pilgrim River and therefore a commercial fishery targeting sockeye salmon is not expected to occur in Port Clarence. However, if the run is projected to reach 30,000 sockeye salmon in Pilgrim River and a market is available then commercial fishing time may be allowed.

Subsistence salmon fishing permits are required for the Port Clarence District, Pilgrim River drainage and Salmon Lake. Catch limits are listed on subsistence permits and in Table 2. Unlike anywhere else in the Norton Sound District, or Port Clarence District, the use of a dip net to harvest salmon is allowed in Pilgrim River.

The sockeye salmon run in the Pilgrim River crashed in 2009 with only 953 fish through the weir after the previous 6 years had record passage from 20,000 to 85,000 sockeye salmon. The sockeye salmon escapement was only 1,654 fish in 2010. However, the escapement goal range of 4,000 to 8,000 sockeye salmon in Salmon Lake, observed by aerial survey, was achieved the last four years. There were poor sockeye salmon escapements in the majority of the parent years for this year's run and the department may need to close subsistence salmon fishing in Pilgrim River because an expected poor run. The department will compare the 2015 sockeye salmon run with historical escapement counts at the Pilgrim River weir after the July 4 weekend and decide if a closure is necessary to reach the escapement goal range. No other subsistence fishing closures are expected in the Port Clarence District.

TABLES AND FIGURES

Table 1.—Commercial salmon catches by species, Norton Sound District, 1961–2014.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1961	5,300	35	13,807	34,327	48,332	101,801
1962	7,286	18	9,156	33,187	182,784	232,431
1963	6,613	71	16,765	55,625	154,789	233,863
1964	2,018	126	98	13,567	148,862	164,671
1965	1,449	30	2,030	220	36,795	40,524
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	87,916	95,956	193,060
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	47,862	81,644	42,898	181,392
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 ^a	22	47	42,016	0	6,296	48,381
2005	151	12	85,523	0	3,983	89,669
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 ^a	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 ^a	197	134	37,056	205,498	62,772	305,657
2013 ^a	151	247	53,802	8,338	118,709	181,247
2014	289	519	112,756	182,406	107,745	403,715
Average 2009-2013	151	196	59,779	53,980	88,780	202,886
Average 2004-2013	105	110	80,369	34,919	51,178	166,681

Note: Harvest numbers may include a small number of salmon retained for personal use reported on fish tickets that were not commercially sold.

^a All Chinook salmon caught were not sold, but were retained for personal use.

Table 2.–Norton Sound and Port Clarence Districts subsistence permit limits.

<u>Nome Subdistrict</u>	
Sinuk River	100 coho/household, and 100 red/household
Cripple River	300 salmon/household (no chum and 3 coho)
Penny River	300 salmon/household (no chum and 3 coho)
Nome River	200 chum/household and 60 coho/household
Snake River	100 chum/household and 60 coho/household
Eldorado River	40 coho/household
Flambeau River	40 coho/household
Bonanza River	80 coho/household
Solomon River	500 salmon/household (no more than 40 chum, and 20 coho)
Safety Sound/Bonanza Channel	40 coho/household
Marine Waters	No catch limits
<u>Norton Sound District from Cape Douglas to Rocky Point (outside the Nome Subdistrict)</u>	
Marine Waters	No catch limits
Fresh Waters	100 salmon /household (no more than 20 chum and 10 coho)
<u>Golovin, Elim, Norton Bay, Shaktoolik and Unalakleet Subdistricts</u>	
Marine Waters & Fresh Waters – No catch limits	
<u>Port Clarence District</u>	
Marine Waters	No catch limits
Pilgrim River	500 salmon/household (no more than 3 king, 25 red & 3 coho)
Salmon Lake	Opened by emergency order only; 100 salmon/household
Kuzitrin River	100 salmon/household (above the confluence of the Pilgrim River) – no more than 3 king & 3 coho.

Note: The waters of the Nome Subdistrict are subject to closures from June 15 to September 30. The Port Clarence District is outside the Nome Subdistrict area and, therefore, subsistence fishing can occur 7 days a week unless closed by an emergency order.

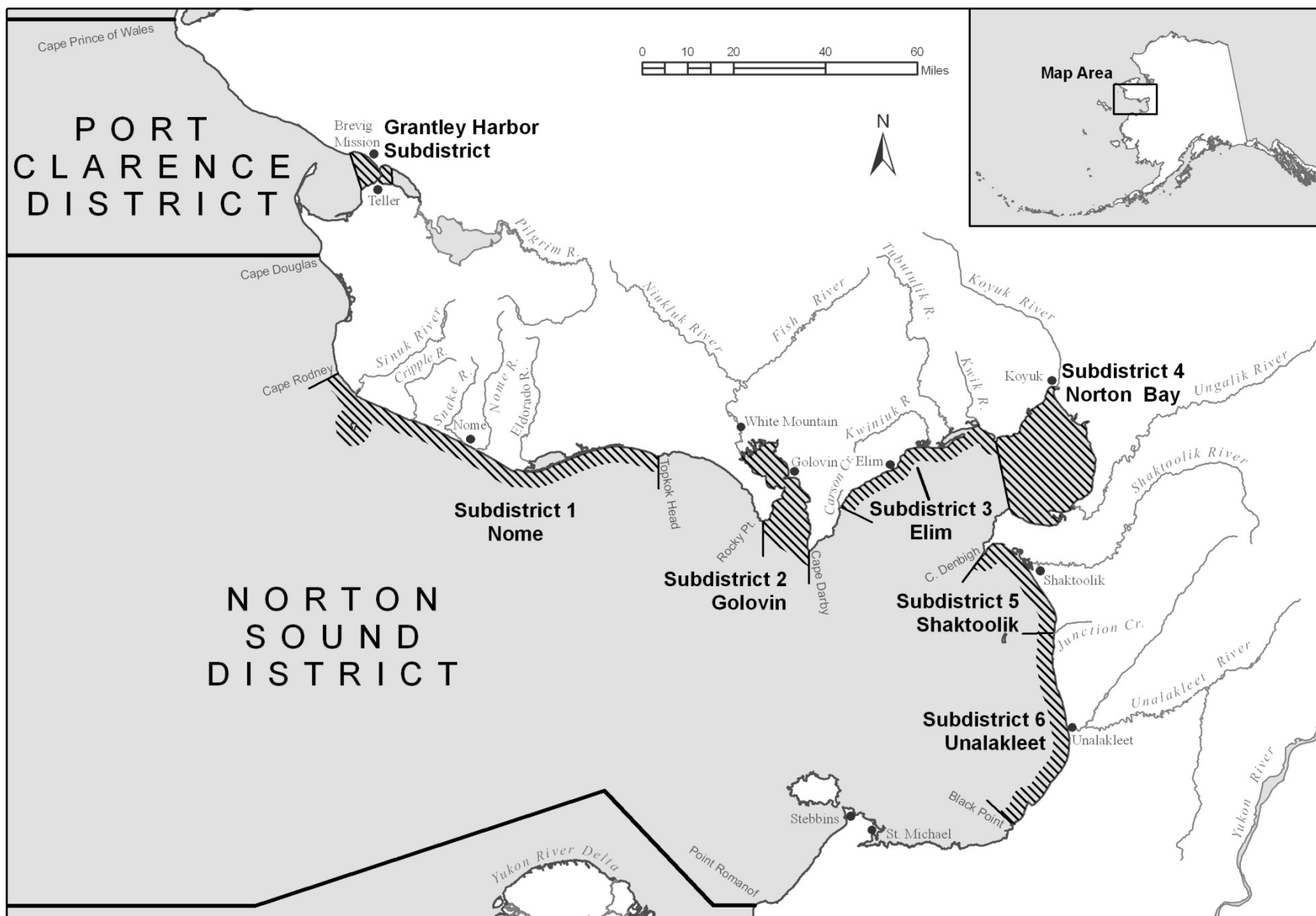


Figure 1.—Norton Sound District and Port Clarence District.

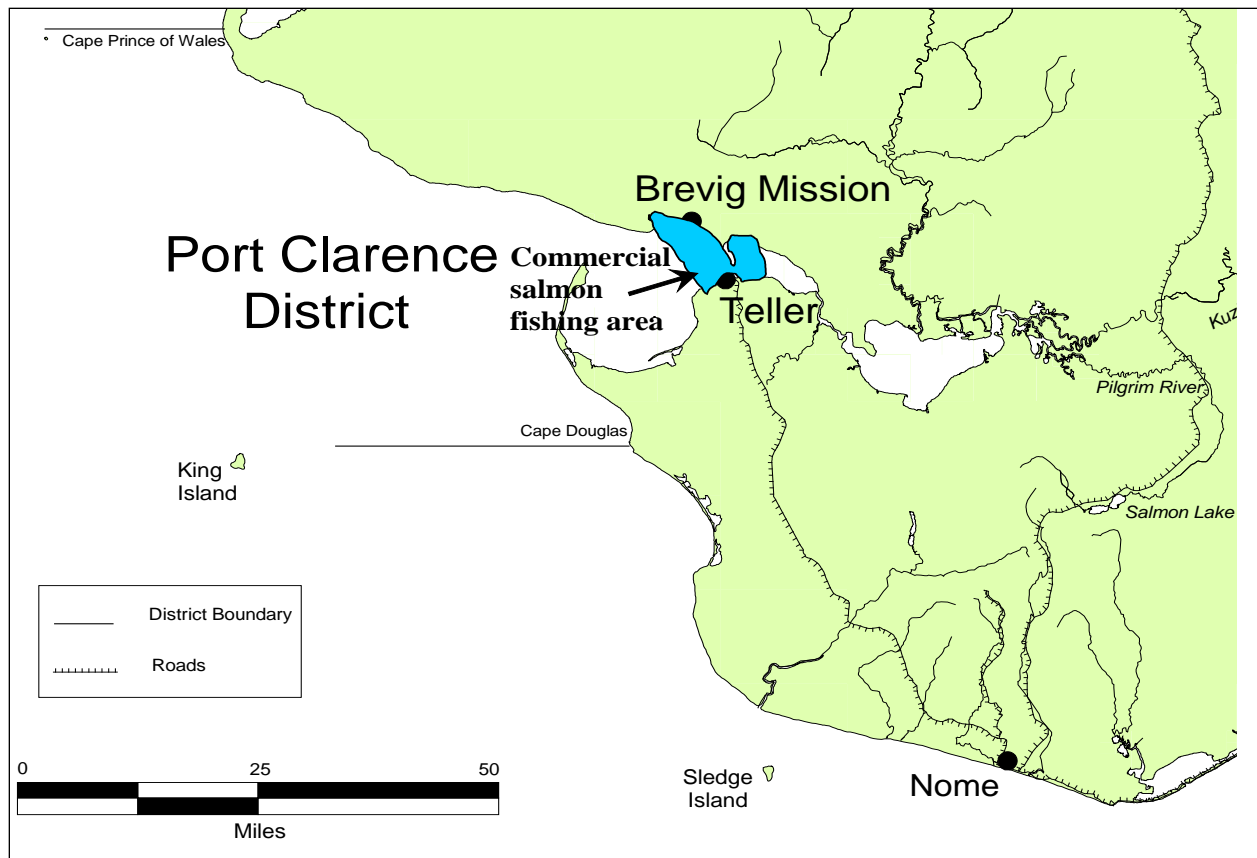


Figure 2.—Port Clarence District commercial salmon fishing area.