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**Advisory Announcement**  
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## 2022 KOTZEBUE SOUND SALMON MANAGEMENT OUTLOOK

### INTRODUCTION

The Kotzebue District salmon fisheries management outlook is to inform fishermen, processors, and other interested people of the management strategies for the commercial salmon fishery. The Kotzebue District includes all waters from Cape Prince of Wales to Point Hope. The Kotzebue District is divided into three subdistricts. Subdistrict 2, near the mouth of the Noatak River is closed to commercial fishing by regulation. Most fishing occurs in Subdistrict 1, which is subdivided into six statistical areas to help managers determine catch location (Figure 1). Within the Kotzebue District, chum salmon *Oncorhynchus keta* are the most abundant anadromous fish. Other salmon species (Chinook *O. tshawytscha*, pink *O. gorbuscha*, coho *O. kisutch*, and sockeye salmon *O. nerka*) occur in lesser numbers, as do Dolly Varden *Salvelinus malma*, and sheefish (inconnu) *Stenodus leucichthys*.

### HISTORICAL FISHING EFFORT

#### Subsistence Fishery

Subsistence fishing has long been an important food gathering activity for people of the Kotzebue Sound drainages. The most recent subsistence survey of salmon harvest is from 2014 that estimated a total of 30,640 chum salmon that were harvested from the Kobuk River, and 6,577 chum salmon that were harvested from the Noatak River and Kotzebue residents reported a harvest of 21,144 chum salmon with the majority harvested in marine waters. Over 90% of the subsistence salmon harvests are chum salmon.

#### Commercial Fishery

There have been two major buyers in the commercial fishery in recent years. In 2018, there was a record harvest of 695,153 chum salmon caught by 95 permit holders that sold chum salmon for an average price of \$0.40 per pound. The 2019 harvest was 494,593 chum salmon caught by 92 permit holders that sold chum salmon for an average price of \$0.39 per pound and in 2020 only 149,808 chum salmon were harvested by 68 permit holders for an average price of \$0.45 per pound. During the 2021 season, 96,492 chum salmon were harvested by 52 permit holders for an average price of \$0.46 per pound.

### 2022 RUN OUTLOOK

The outlook for the 2022 season is based on the parent-year escapements and returning age classes observed in the commercial fishery. The 5-year-old component of the run is expected to be well below average based on the 4-year-old return in 2021. The 4-year-old component of the run is expected to be below average based on the 3-year-old return last year. The 3-year-old and 6-year-old age classes are much smaller components of the run and are expected to be below average. The commercial harvest is expected to fall within the range of 100,000 to 200,000 chum salmon. Two major buyers are expected in July and a lower volume, value-added buyer has expressed interest in buying fish.

## **MANAGEMENT STRATEGIES**

The fishery is scheduled to open on July 10 with two buyers expected on the Kotzebue north shore. The fishery closes on August 31 unless extended by emergency order because of a strong unexpected late run.

Primary commercial fishery management objectives are to provide adequate chum salmon passage through the commercial fishery: (1) to ensure sustained runs by allowing adequate escapement, and (2) to meet subsistence harvest uses. Fishery management will be dependent on comparing period and cumulative season catch rates to prior years and test fishing results on the Kobuk River.

Age composition of commercial salmon catches will be monitored to determine the strength of age classes in the run. If there is a low abundance of older salmon, which tend to migrate into freshwater first, catch rates will likely be weak early in the season. A stronger than expected 4-year-old return may cause midseason catches to rise.

During the first week of the fishery, there are expected to be daily 8-hour fishing periods, except Saturday. Because of the poor expected return of fish, the department may limit fishing time in the following weeks depending on commercial catches, upriver subsistence catch reports, and test fish catches at the Kobuk River test fish project.

If commercial catches indicate adequate run strength and test fish catches are sufficient, the department will allow commercial fishing to continue based on market conditions and escapement indicators. Likewise, in August as the Noatak River chum salmon run passes through the district, the department will consider fishing restrictions if commercial catches indicate a weak run.

Like last year, if poor run strength necessitates fishing restrictions, the department will establish periodic closures of the fishery and fishing time may be reduced to every other day or less. If concern arises about salmon runs, the department will notify the fishermen and the buyers about the need to reduce commercial fishing time.

Last year during the second week of the fishing season, the department reduced fishing to 5 days a week and then further reduced fishing to 3 days a week for the remainder of the season, except in the late August when the buyers notified the department that they would cease operations before the last week of the season and 5 days a week fishing was allowed for the final week the buyers were present.

No subsistence fishing restrictions are expected in 2022.

## **ESCAPEMENT OBJECTIVES**

Inseason escapement-based management will consist of one test fish project on the Kobuk River and reports from subsistence fishers. The test fishing project on the Kobuk River, in the vicinity of Kiana, will provide an inseason index of chum salmon passage. The department has a cumulative catch index objective of 600 for the season at the test fish project (Table 2). If the index is projected to fall short of 600, then the commercial fishery will close until the test fish index projection improves enough to make sure adequate escapement is moving into the Kobuk River.

Aerial surveys may be attempted beginning in September. Aerial surveys are not a direct count or estimate of the salmon population but are used as an index for comparison with surveys in prior years. Surveys are conducted too late to affect present year fisheries decisions but do provide useful information in evaluating management decisions and help project future salmon returns. Aerial survey data are utilized to document peak salmon abundance on the spawning grounds as an index to total escapement. These enumeration techniques are best initiated during times of low river water levels, high water clarity, and good sunlight penetration.

One of the primary fishery management strategies is to provide for escapement within sustainable escapement goal ranges (SEG) for each river system. These ranges, developed in 2018, are based on an analysis of historical harvest and escapement information of specific index areas within major drainages. These aerial survey escapement objectives are: (1) subject to continued review, (2) intended to evaluate escapement trends between years, and (3) are not a total count of the salmon escapement. The Noatak and upper Kobuk Rivers may be flown if weather conditions permit. The chum salmon escapement goals are as follows: Noatak River (mouth to Kelly Bar, including the Eli River) 43,000–92,800 fish, and upper Kobuk River and Selby River 12,000–32,100 fish.

Table 1.–Kotzebue Sound chum salmon fishery historical information, 1962–2021.

Year	Total Catch	Number of Permits <sup>a</sup>	Average Catch per Permit Holder	Gross Value of Catch to Permit Holders <sup>b</sup>
1962	129,948	84	1,547	\$4,500
1963	54,445	61	893	\$9,140
1964	76,449	52	1,470	\$34,660
1965	40,025	45	889	\$18,000
1966	30,764	44	699	\$25,000
1967	29,400	30	980	\$28,700
1968	30,212	59	512	\$46,000
1969	59,335	52	1,141	\$71,000
1970	159,664	82	1,947	\$186,000
1971	154,956	91	1,703	\$200,000
1972	169,664	104	1,631	\$260,000
1973	375,432	148	2,537	\$925,000
1974	627,912	185	3,394	\$1,822,784
1975	563,345	267	2,110	\$1,365,648
1976	159,796	220	726	\$580,375
1977	195,895	224	875	\$1,033,950
1978	111,494	208	536	\$575,260
1979	141,623	181	782	\$990,263
1980	367,284	176	2,087	\$1,446,633
1981	677,239	187	3,622	\$3,246,793
1982	417,790	199	2,099	\$1,961,518
1983	175,762	189	930	\$420,736
1984	320,206	181	1,769	\$1,148,884
1985	521,406	189	2,759	\$2,137,368
1986	261,436	187	1,398	\$931,241
1987	109,467	160	684	\$515,000
1988	352,915	193	1,829	\$2,581,333
1989	254,617	165	1,543	\$613,823
1990	163,263	153	1,067	\$438,044
1991	239,923	142	1,690	\$437,948
1992	289,184	149	1,941	\$533,731
1993 <sup>c</sup>	73,071	114	641	\$235,061
1994	153,452	109	1,408	\$233,512
1995	290,730	92	3,160	\$316,031
1996	82,110	55	1,493	\$56,310
1997	142,720	68	2,099	\$187,978
1998	55,907	45	1,242	\$70,587
1999	138,605	60	2,310	\$179,781
2000	159,802	64	2,497	\$246,786
2001	211,672	66	3,207	\$322,650
2002	8,390	3	2,797	\$7,572
2003	25,763	4	6,441	\$26,377
2004	51,077	43	1,188	\$64,420
2005	75,971	41	1,853	\$124,820
2006	137,961	42	3,301	\$229,086
2007	147,087	46	3,198	\$243,149
2008	190,550	48	3,970	\$385,270
2009	187,562	62	3,025	\$376,554
2010	270,343	67	4,035	\$860,125
2011	264,321	89	2,970	\$867,085
2012	227,965	83	2,747	\$567,665
2013	319,062	66	4,834	\$689,165
2014	636,252	94	6,769	\$2,879,016
2015	305,383	105	2,908	\$867,583
2016	400,417	86	4,656	\$1,123,248
2017	463,749	100	4,697	\$1,837,888
2018	695,153	95	7,317	\$2,279,477
2019	494,593	92	5,376	\$1,556,257
2020	149,808	68	2,203	\$542,308
Average	230,853	107	2,375	\$711,273
2021	96,492	52	1,856	\$332,064

<sup>a</sup> During 1962–1966 and 1968–1971 figures represent the number of vessels licensed to fish in the Kotzebue District, not the number of fishermen.

<sup>b</sup> Some estimates between 1962 and 1981 include only chum value which in figures represent over 99% of the total value. Figures after 1981 represent the chum value as well as incidental species such as Dolly Varden, whitefish and other salmon.

<sup>c</sup> Includes 2,000 chum salmon and \$3,648 from the Sikusuilaq Springs hatchery terminal fishery.

Table 2.–Kobuk River chum salmon test fishery comparison, 1993 – 2021.

Year	Project Operation Dates	Number of test fish drifts	Number of days off inseason <sup>a</sup>	Rank by number of drifts	Cumulative CPUE	Rank by cumulative CPUE
1993	7/12-8/12	164	4	25	496.77	28
1994	7/13-8/30	248	6	1	1,218.97	16
1995	7/12-8/16	196	3	20	1,188.31	19
1996	7/09-8/14	208	2	11	2,581.39	3
1997	7/09-8/14	202	3	16	797.19	23
1998	7/10-8/15	182	4	23	538.35	27
1999	7/11-8/13	176	2	24	1,357.45	15
2000	7/07-8/14	228	0	6	1,481.32	13
2001	7/05-8/13	232	0	5	1,574.72	10
2002	7/05-8/12	218	2	8	868.75	21
2003	7/09-8/13	214	0	10	748.86	24
2004	7/02-8/12	242	0	2	854.72	22
2005	7/07-8/15	207	3	13	1,206.55	18
2006	7/07-8/19	217	4	9	742.94	25
2007	7/11-8/20	207	6	13	1,342.11	17
2008	7/09-8/14	200	2	18	2,268.79	9
2009	7/10-8/20	242	1	2	970.94	20
2010	7/14-8/24	234	2	4	1,401.48	14
2011	7/13-8/21	220	3	7	2,498.83	6
2012	7/17-8/16	151	4	28	2,398.44	7
2013	7/17-8/25	208	5	11	2,698.49	2
2014	7/17-8/13	152	2	27	4,149.62	1
2015	7/17-8/25	204	5	15	2,534.52	4
2016	7/20-8/25	189	4	22	1,483.82	12
2017	7/20-8/26	202	3	16	2,096.84	8
2018	7/18-8/28	200	5	18	2,529.45	5
2019	7/17-8/28	194	6	21	1,508.77	11
2020	7/24-8/29	158	4	26	692.33	26
2021			Flooded out			

<sup>a</sup> Number of days during the season where the crew had the day off and no test fishing occurred.

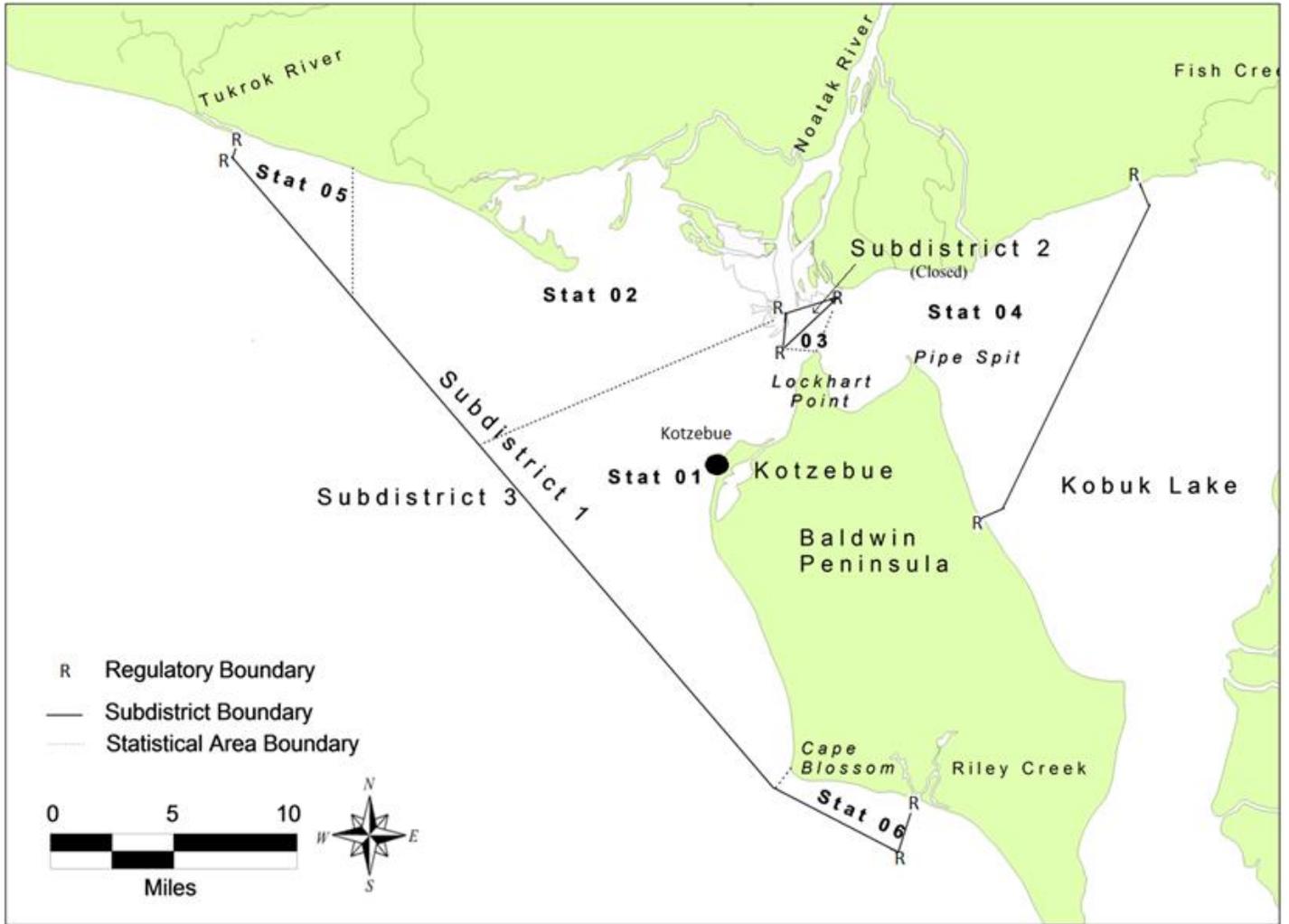


Figure 1.—Kotzebue Sound salmon subdistricts.