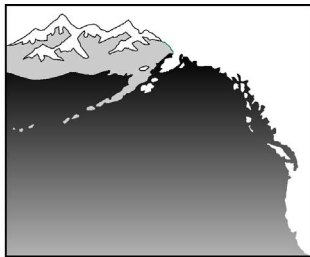


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A BRISTOL BAY ALMANAC FOR 2001

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University of Washington
**SCHOOL OF AQUATIC
& FISHERY SCIENCES**

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Dan Gray and Arnie Shaul of the Alaska Department of Fish and game kindly provided preliminary fishery statistics from 2000 which were used in this almanac. Marcus Duke compiled the manuscript.

Key Words

Bristol Bay, forecasts, Port Moller, sockeye and chum salmon, *Oncorhynchus* spp.

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Introduction

The purpose of these daily summaries is to provide Bristol Bay processors with the statistics to forecast the total sockeye salmon (*Oncorhynchus nerka*) run in 2001 from the Port Moller index catches starting June 20 (the earliest that forecasts are feasible) and ending July 7 (the recent mid-point in the Bristol Bay catch). Also, by using the daily ADF&G summaries of the cumulative catches and escapements, processors can compare the daily 2001 numbers through July 10 with averages and ranges from recent years (1987–2000).

Port Moller Test Boat

The test boat attempts to fish each day at 4 stations located along a transect line between Port Moller and Cape Newenham. The stations, 2 to 8, are located 33, 43, 53, and 63 mi out from Port Moller (13, 23, 33, and 43 mi from the coastline). Additional stations, 10 and 12, may be fished if the salmon are distributed far offshore. An index catch at each of the four stations is the number caught per 100 fm per 60 min. A 200-fm net is usually fished for about 60 min, so the station index is usually about one-half of the actual catch. In past years, the daily index was the sum of the index catches at the four stations and the cumulative index (used to forecast) was the sum of the daily indices starting with June 11. In 1995, salmon were distributed well offshore with the largest catches made at station 8 (43 mi from the coastline). This unusual distribution resulted in under forecasting the run in 1995 because, in past years, salmon were usually concentrated at stations 4 or 6.

In 1996, a new daily index was calculated to account for the fact that salmon may be distributed farther out from station 8 than inside station 2. The new daily index gave the catch at station 8 twice the weight of catches made at the other stations. Therefore, we add catches at stations 2, 4, 6, and 2 times the catch at station 8. This sum divided by 5 and then multiplied by 4 (or the sum multiplied by

0.8) provides the daily index catch. In 2000, the salmon were concentrated at station 10; thus we used station 10 rather than 2x station 8 in calculating the daily index. The daily index catches are added each day beginning June 11 to calculate the cumulative indices that are used to forecast the final run. The daily and cumulative indices are given in Tables 1 and 2.

Daily water temperatures off Port Moller are given in Table 3. The timing of the Bristol Bay runs (especially from Port Moller to the Bay) is usually related to temperature in the Bering Sea and North Pacific, with fish swimming faster or starting their migrations earlier at warmer temperatures, and slower or later at colder temperatures; however, there have been years with average timing when temperatures were either warm (over 8°C) or cold (under 5°C) at Port Moller.

About June 20, we will have a forecast of run timing based on an analysis of ocean temperatures in the North Pacific. Spatial and temporal distribution off Port Moller can be examined from index catches of sockeye and chum salmon by station and 5-day periods in Tables 4 and 5.

An early indication of the ocean age composition in the Port Moller catches can be obtained from the average lengths of the fish that are reported daily (scales take longer to be aged). Usually, if the average length is over 550 mm, the majority of the sockeye are 3-ocean fish and if they are under 550 mm they are mostly 2-ocean fish (Fig. 1). However, in 1990–1992, 1994, 1996, 1998 and 2000, the 3-ocean fish were very small because ocean growth was poor and average lengths as low as 535 mm were still associated with a majority of 3-ocean fish in the Port Moller catch. Average lengths of sockeye salmon in the Port Moller catches can be converted to average weights from length and weight statistic obtained from Bristol Bay catches (Table 6). When the Port Moller scales are aged, we can then estimate the age composition in the Bristol Bay run (Fig. 2). Because of net selectivity, there is not a one-to-one relationship in ocean age between Port Moller catches

and the Bristol Bay run. When there are high percentages of 3-ocean fish at Port Moller, we can expect lower percentages in Bristol Bay (e.g., when 75% of the fish caught at Port Moller are 3-ocean, we would expect only 64% 3-ocean in the Bristol Bay run).

Bristol Bay Runs

The daily commercial catches and the escapements at towers have been a poor predictor of the total run until about the mid-point of the run (Fig.3). Beginning about July 7, the final run has been closely correlated with the cumulative catch and escapement except for the very late run in 1994 and very early run in 1993. In a typical year with a large run (1995), large numbers of sockeye are first present in the fishing districts between 25 and 30 June but they have shown up as early as 21 June (1993) or as late as 2 July (1994). The daily catches in Bristol Bay (all districts) and the dates on which 50% of the season's catch were made are given in Table 7. This date is usually 1 to 2 days later than the mid-point in the run and is affected by run timing (early in '79, '93, and 2000 and late in '86 and '94), strikes ('80 and '91), or management (restricted early fishing in '87 and '98 and extensive early fishing in '96).

The 2001 preseason forecasts are given in Table 8. About 40% of the run is expected to be 3-ocean fish from the 1996 brood year. Runs of 3-ocean fish, especially age 1.3, would seem likely from the returns of 2-ocean fish in 2000. Very few jacks were in the 2000 run—thus the very low forecast for 2-ocean sockeye in 2001. An early indication of the Bristol Bay run magnitude may come from the False Pass fishery (Table 9). There was a fair correlation between the South Unimak catch and the Bristol Bay run if the 1990 and 1994–1998 data were excluded (the same years that are outliers in the Port Moller/Bristol Bay data). Large catches generally indicate a large run; however, small catches do not preclude a large run since weather or fleet conditions (strikes) can influence the South Unimak catch. The age composition in the False Pass catches will probably be of more value than the catches in predicting the strength of the Bristol Bay run in 2000.

The Port Moller test boat catches have over forecasted the Bristol Bay run in four of the past five years, with 1997 showing the largest error (Fig. 4). The final inseason forecasts made from a combination of Port Moller statistics and inshore catches and escapements have been fairly close; however, there is a need to make these forecasts earlier (i.e., before July 4). The mean lengths of sockeye salmon in the Port Moller catches were a fair predictor of the size of the Bristol Bay run (small fish—large run, large fish—small run); however, in both 1997 and 1998, the sockeye salmon at Port Moller were relatively small yet the runs were not large. It appears that growth conditions other than competition from numbers of fish were a major factor in influencing growth in 1997 and 1998.

Daily Almanac

The ensuing 21 daily summaries provide the following: (1) the average cumulative catches and escapements through midnight of the date shown and the average and range in the percentages of the season totals that were reached by that date for 1987–2000; (2) the average and range in the daily and cumulative Port Moller index catches for 1987–2000 for comparison with 2001; (3) a plot of the past Bristol Bay runs on the cumulative indices through the date shown and the predictive equation (through July 7); and (4) Port Moller, fishery and escapement comments. The 1990 run was unusual in that it was a very large run that started late, had a very concentrated peak and then ended as usual, and the 1994 run was late throughout. In those years, the False Pass fishery had difficulty catching its quota because the fish were not distributed in a typical manner. The 1990 and '94 data points in our predictive equations were thus considered outliers (excluded from calculations) for predictions through June 27 (mid-point at Port Moller). The years 1990 and '94 are shown as open circles on the graphs. The 1997 observation (small run for a relatively large index) is an obvious outlier; it was excluded in calculating the predictive equation for 2001 because environmental conditions were very unusual that year.

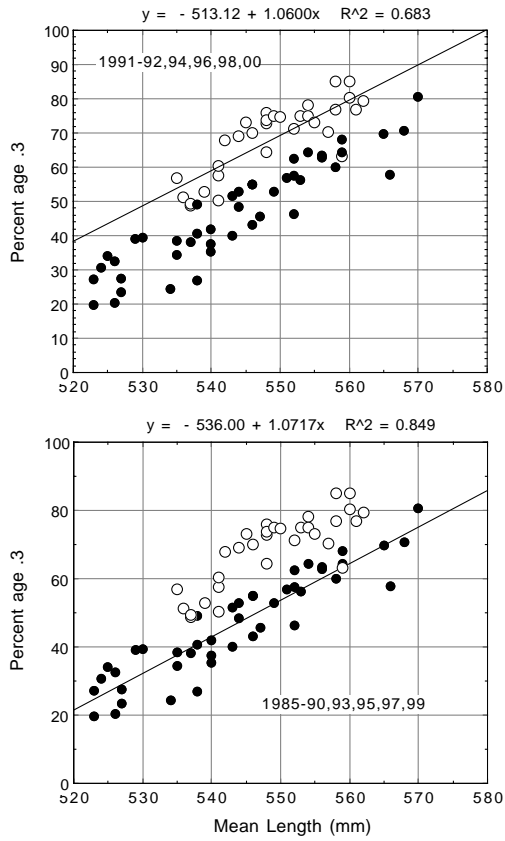


FIGURE 1. Correlation between ocean age and the average length of sockeye salmon off Port Moller.

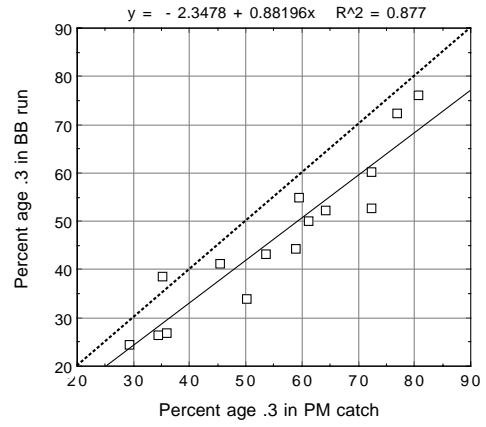


FIGURE 2. Correlation in the percent 3-ocean fish between Bristol Bay and Port Moller.

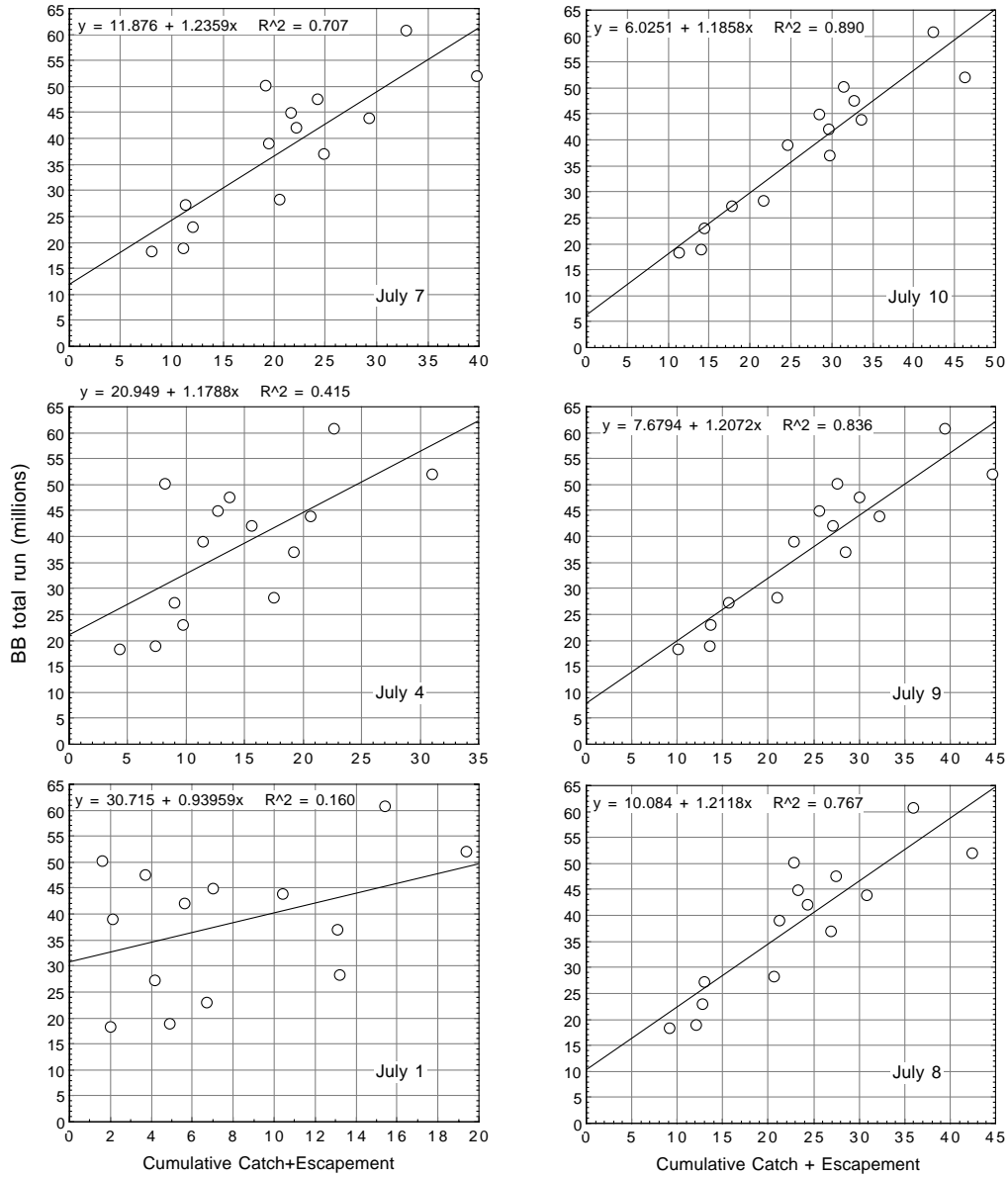


FIGURE 3. Relationship between total run and cumulative catch+escapement, 1985–2000.

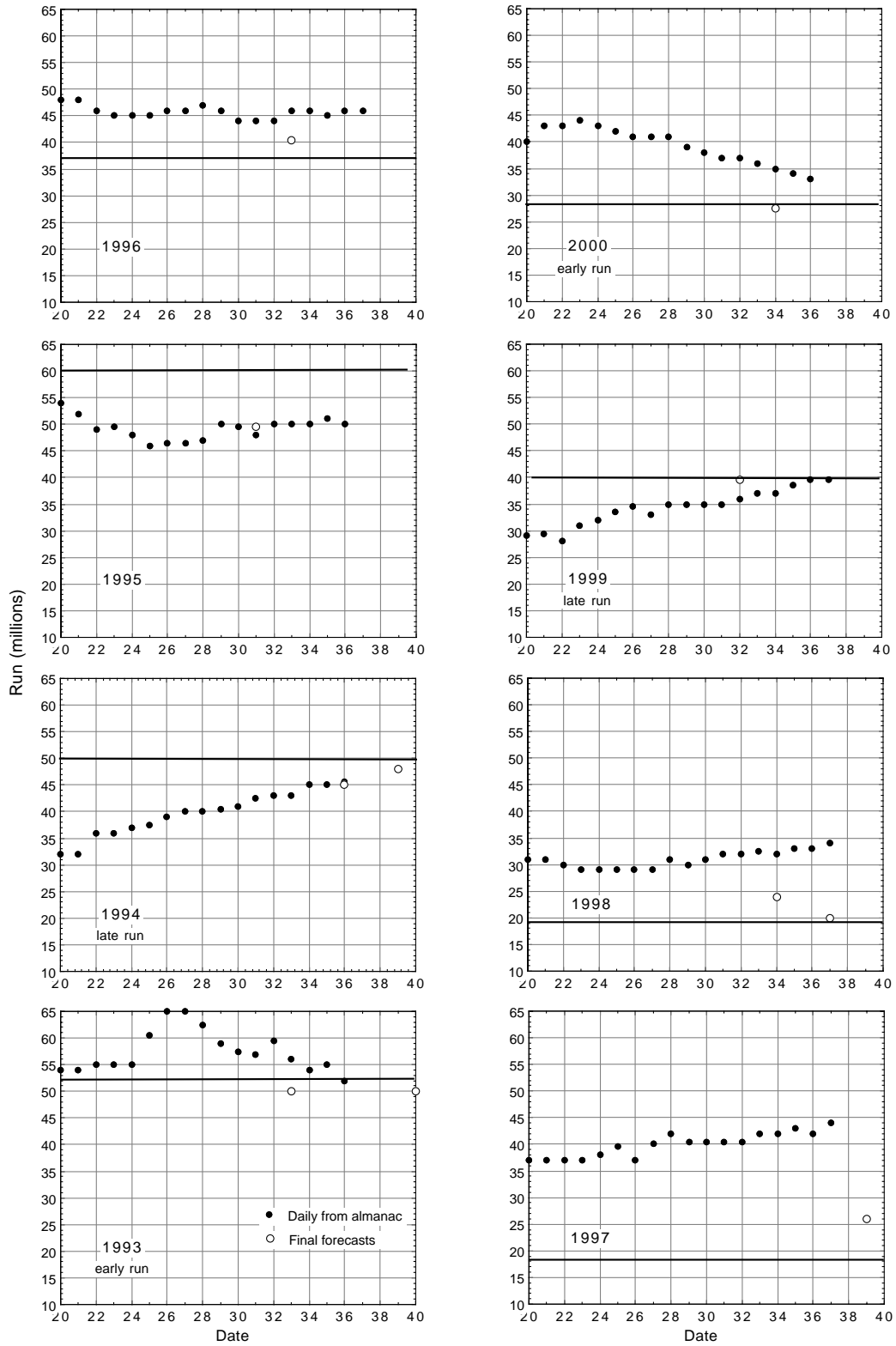


FIGURE 4. Daily forecasts from almanacs, final forecasts, and actual runs, 1993–2000.

TABLE 1. Port Moller daily sockeye index catches.

Date	2001 index	Past index catches																			mean					
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	min	max		
		21	16	5	13	21	33	4	18	18	18	18	17	85	54	24	23	26	17	18	15	14	39	32	14	65
6/11	50	16	36	47	98	89	17	85	54	24	23	26	17	18	15	14	39	32	14	39	32	14	39	32	14	65
17	47	8	42	46	58	63	10	89	6	40	16	57	6	102	36	6	89									89
18	69	25	22	27	76	152	35	89	114	58	43	102	7	10	40	59	7	152								152
19	55	68	28	82	56	137	45	91	132	81	41	83	6	14	39	66	6	137								137
20	66	73	46	86	106	73	37	118	112	60	41	87	19	52	21	70	19	118								118
21	41	64	43	56	100	116	86	144	118	98	42	83	15	14	55	73	14	144								144
22	100	43	53	102	77	97	110	188	124	157	46	94	26	71	81	92	26	188								188
23	125	92	43	94	88	135	152	122	144	96	62	89	28	74	73	96	28	152								152
24	88	162	61	93	100	105	117	100	141	180	137	67	50	86	63	106	50	180								180
25	85	112	48	76	102	142	95	232	110	54	154	57	22	86	21	98	22	232								232
26	61	97	52	82	132	153	111	158	48	55	106	28	51	138	80	91	28	158								158
27	70	60	59	140	109	124	141	158	108	131	137	70	48	61	54	101	48	158								158
28	57	164	76	154	111	182	149	190	120	68	284	118	33	140	175	132	33	284								284
29	65	81	118	114	78	217	135	112	133	95	197	94	85	75	162	114	65	217								217
30	68	126	91	124	130	146	260	287	226	20	243	94	51	73	170	139	20	287								287
7/1	53	124	119	83	104	187	161	175	170	79	173	94	46	26	28	114	26	187								187
2	51	132	48	133	155	172	167	242	85	50	155	94	46	27	44	111	27	242								242
3	57	157	131	234	117	188	123	60	162	174	223	118	23	33	78	129	23	234								234
4	33	128	82	76	184	149	197	79	105	66	101	195	22	30	76	103	22	197								197
5	45	121	130	132	108	122	143	100	109	127	62	140	48	30	98	101	30	143								143
6	37	188	102	138	157	182	146	81	103	67	61	137	23	20	94	103	20	188								188
7	37	142	42	90	59	106	107	74	64	56	60	108	39	20	72	72	20	142								142
8	21		75	79	96	53	105	33	120	69					72	21		120								120
9			98			89	54	62	43	87					72	43		98								98
10								35							35											35
Run (millions)		18	19	37	61	50	52	45	42	48	44	44	23	27	36	39	18	61								61

italics for missing days

TABLE 2. Daily cumulative sockeye index catches off Port Moller.

DATE	2001																	87-00	min	max
	Index	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987	1985				
6/11		21	16	6	13	22	33	4	18	18	6	7	17	7	8	8	14	4	33	
12		89	33	11	30	43	62	7	29	37	13	19	43	16	15	13	32	7	89	
13		147	47	16	42	67	99	12	57	56	19	32	67	28	22	28	51	12	147	
14		191	53	27	67	120	186	21	146	76	25	43	85	40	30	51	79	21	191	
15		256	67	50	97	159	248	38	208	122	42	61	111	56	43	91	111	38	256	
16		306	83	85	144	257	337	55	293	176	66	84	137	74	53	142	154	53	337	
17		352	91	128	190	315	400	66	382	182	106	100	194	82	61	244	189	61	400	
18		421	116	150	217	391	552	101	472	296	164	143	297	89	71	284	249	71	552	
19		476	184	178	299	447	689	146	562	428	245	184	380	95	85	323	314	85	689	
20		543	257	224	386	552	762	183	681	540	305	225	468	114	138	343	384	114	762	
21		584	321	266	441	653	878	269	824	658	404	267	550	128	151	398	457	128	878	
22		684	364	320	543	730	975	379	1012	783	561	313	644	154	223	479	549	154	1012	
23		808	456	363	637	818	1110	531	1135	927	657	374	733	181	296	553	645	181	1135	
24		896	618	423	730	918	1214	648	1234	1068	837	511	799	231	383	616	751	231	1234	
25		981	730	471	806	1020	1356	743	1466	1178	891	665	857	253	469	637	849	253	1466	
26		1042	827	523	888	1152	1509	854	1624	1226	946	771	885	305	607	717	940	305	1624	
27		1110	887	582	1029	1261	1633	995	1783	1334	1077	908	955	353	668	771	1041	353	1783	
28		1199	1051	659	1183	1371	1815	1144	1973	1453	1146	1192	1072	386	808	947	1175	386	1973	
29		1265	1132	776	1297	1449	2033	1279	2085	1586	1241	1389	1166	472	883	1109	1290	472	2085	
30		1333	1258	867	1421	1580	2179	1538	2372	1812	1261	1632	1261	523	956	1279	1428	523	2372	
7/1		1386	1382	986	1504	1684	2365	1699	2547	1981	1340	1804	1354	568	983	1307	1542	568	2547	
2		1437	1513	1034	1637	1838	2537	1866	2789	2066	1390	1960	1448	614	1010	1351	1653	614	2789	
3		1494	1671	1165	1871	1955	2725	1990	2849	2228	1564	2182	1566	637	1043	1429	1781	637	2849	
4		1527	1799	1247	1947	2139	2874	2187	2928	2333	1629	2284	1761	659	1073	1505	1885	659	2928	
5		1572	1920	1377	2079	2247	2995	2330	3028	2443	1756	2345	1901	707	1104	1603	1986	707	3028	
6		1610	2108	1479	2217	2404	3177	2476	3109	2546	1823	2406	2038	730	1135	1697	2090	730	3177	
7		1647	2250	1521	2307	2463	3283	2583	3183	2610	1878		2147	769			2220	769	3283	
8		1667		1595	2386	2560	3336	2689	3216	2730	1947						2458	1595	3336	
9				1693			3424	2742	3278	2773	2034						2657	1693	3424	
10							3313										3313			
Run, excl. jacks		28	39	18	19	37	61	50	52	45	42	48	44	23	27	36	39	18	61	

Cumulative indices include estimates for missing days (average of 2d before and 2d after missing day or days)
 2000 cum index calculated from stations (2,4,6,8, and 10)/5. All others from 2,4,6,(2x8)/5.

TABLE 3. Surface water temperatures off Port Moller.

Date	81	82	83	84	85	87	88	89	90	91	92	93	94	95	96	97	98	99	2000	2001
6/11	9.3	4.2	8.8		5.0	5.9	8.4	4.4	6.6	4.5	7.1	7.2	7.2			7.1		2.1	4.5	
12	10.1	4.7	8.5	8.7	3.8	5.4	8.1	4.8	6.7	4.9	6.5	6.9	7.0	7.2	4.9	7.1	6.8	1.3	4.3	
13	10.6	5.8	8.8	8.1	4.1	4.9	7.5	5.0	6.0	4.7	6.5	7.3	6.2	6.8	5.0	7.4	7.1	1.5	4.0	
14	10.5	5.6	9.1	7.9	4.1	5.0	7.5	5.3	5.2	4.6	5.9	7.7	5.7	6.8	5.4	6.7	7.5	1.6	4.9	
15	10.2	5.8	9.4	8.0	5.0	5.0	7.0	6.2	5.8	4.6	5.5	8.0	6.1	6.9	5.6	7.6	7.7	2.4	5.8	
16	9.8	6.3	9.2	8.5	5.0	4.9	6.8	5.9	6.3	3.8	7.2	7.4	5.6	6.9	5.9	7.6	7.6	2.4	6.3	
17	9.5	6.9	9.2	9.1	6.1	4.8	6.8	7.2	6.8	4.0	7.1	7.3	5.4	7.1	5.9	8.5	8.3	2.3	6.0	
18	10.3	6.4	9.3	9.3	5.8	4.7	6.9	7.3	7.4	4.5	7.4	7.2	6.3	6.9	5.8	8.0	8.0	2.5	6.0	
19	10.1	6.7	9.3	9.8	5.4	5.0	7.2	7.1	7.4	5.0	8.3	7.1	6.9	6.7	5.8	9.8	7.6	3.3	6.3	
20	10.0	6.5	9.3	9.8	6.0	4.9	7.2	6.7	7.1	5.0	8.3	7.5	6.6	7.2	5.9	9.6	6.3	3.5	6.1	
21	10.0	6.3	9.3	10.0	6.1	5.1	7.4	6.4	6.8	5.0	9.2	8.4	6.8	6.9	5.8	8.8	6.7	3.9	6.0	
22	10.0	6.2	9.4	9.8	5.9	5.2	7.0	6.4	6.8	5.0	8.5	8.0	7.1	6.6	6.8	9.5	7.1	5.0	6.4	
23	10.1	5.9	9.4	9.5	6.0	5.2	6.9	5.9	7.4	4.9	8.2	8.3	7.1	6.8	6.9	10.0	6.8	4.3	6.6	
24	10.4	5.8	9.4	9.0	5.6	5.4	6.8	5.7	7.0	6.5	9.1	8.6	6.5	7.2	6.6	9.9	7.1	5.4	7.0	
25	10.4	6.6	9.7	8.9	5.3	5.8	6.9	5.6	6.9	6.0	8.3	9.2	5.9	7.3	6.3	9.6	7.1	5.9	7.3	
26	10.5	6.9	9.1	9.1	5.5	6.2	6.7	5.8	6.9	6.4	7.5	8.4	6.0	8.4	6.1	9.4	7.6	5.9	8.5	
27	10.9	6.8	8.7	8.9	5.8	6.7	7.0	6.4	7.3	6.0	7.6	8.3	6.8	7.4	6.4	9.9	7.6	5.6	9.8	
28	10.5	6.3	9.2	9.3	6.6	7.0	7.2	6.9	7.3	5.9	7.8	7.5	6.8	7.0	6.0	10.0	7.5	7.0	9.8	
29	10.4	6.0	9.2	9.3	7.1	6.6	8.0	6.1	7.8	5.6	7.9	7.7	7.1	7.4	6.4	11.0	7.6	6.3	8.9	
30	10.3	6.2	9.7	9.2	7.3	6.1	7.9	6.1	8.5	5.8	8.0	7.7	7.6	7.9	6.1	11.1	9.5	6.0	8.9	
7/01	10.0	6.6	10.0	9.8	6.9	6.0	7.9	5.4	8.8	5.1	7.8	7.6	6.9	7.6	6.2	11.4	9.3	5.9	9.0	
2	9.9	6.1	10.4	10.4	6.6	6.7	7.9	6.5	9.3	5.8	7.6	7.4	7.0	7.9	6.3	11.1	8.5	5.8	9.0	
3	9.9	5.8	10.5	10.6	6.8	6.8	8.0	7.7	9.1	5.9	7.9	7.5	7.0	7.8	6.5	12.0	8.0	6.3	9.0	
4	10.0	5.6	10.8	10.4	6.9		8.9	8.6	8.7	7.0	7.2	7.6	6.9	7.9	6.5	12.5	9.0	6.8	9.0	
5					7.0		8.4		9.0	7.1	6.5	7.6	6.6	7.6	6.5	12.5	8.3	6.6	9.6	
6										8.1	7.0	8.0	6.2	7.9	6.0	12.6	9.2	6.4	9.5	
7										8.8	7.2	8.2	6.9	7.9	8.0	12.9	9.3	7.3	9.8	
8										9.7	7.8	8.8	7.1	7.6	7.5	11.4	9.9	8.3	10.0	
9										8.9	8.5	9.1	7.2	7.4		9.9				
10												9.4								
Mean																				
11/25	10.1	6.0	9.2	9.0	5.3	5.1	7.2	6.0	6.7	4.9	7.5	7.7	6.4	7.0	5.9	8.5	7.3	3.2	5.8	
11/30	10.2	6.1	9.2	9.1	5.6	5.5	7.3	6.1	6.9	5.1	7.6	7.8	6.5	7.1	6.0	8.9	7.4	3.9	6.7	
J 1-5	10.0	6.0	10.4	10.3	6.8	6.5	8.2	7.1	9.0	6.2	7.4	7.5	6.9	7.8	6.4	11.9	8.6	6.3	9.1	

TABLE 4. Average sockeye salmon catch off Port Moller by station and 5-day period; number caught by 100 fm fished for 1 h.

Year/dates	Station			2-8			Station			2-8			Station			2-10						
	2	4	6	8	Means	2	4	6	8	Means	2	4	6	8	Means	2	4	6	8	10	Means	
1985																						
6/11-15	4	8	7	2	5	3	6	17	13	10	1	1	1	14	13	1	1	1	14	47	13	
16-20	3	26	25	4	15	5	14	38	30	22	1	3	4	8	56	1	3	4	8	56	14	
21-25	10	26	17	10	16	21-25	29	45	44	38	2	6	5	21	76	21-25	2	6	5	21	76	22
26-30	48	64	19	14	36	26-30	28	42	60	42	3	5	8	8	64	26-30	3	5	8	8	64	18
7/1-5	29	24	9	9	18	7/1-5	24	30	40	32	2	6	9	9	39	7/1-5	2	6	9	9	39	13
6	4	49	36	14	26	6-10	15	25	16	16	2	2	2	5	25	6-8	2	2	6	5	25	8
Mean-7/5	18.8	29.6	15.4	7.8	17.9	Mean-7/5	17.8	24.4	36.4	28.8	Mean-7/5	1.7	4.1	5.6	12.0	56.5	1.7	4.1	5.6	12.0	56.5	15.9
wt'd index																						
1987																						
6/11-15	1	2	6	1	3	3	3	2	0	2	3	3	2	0	2	3	3	2	0	2	3	
16-20	5	12	3	2	6	16-20	2	13	4	8	16-20	2	13	4	8	16-20	2	13	4	8	16-20	
21-25	22	20	27	7	19	21-25	32	30	27	18	21-25	14	31	51	52	21-25	14	31	51	52	21-25	
26-30	7	37	44	17	26	26-30	14	31	51	52	26-30	14	31	51	52	26-30	14	31	51	52	26-30	
7/1-5	4	11	8	7	8	7/1-5	30	51	43	40	7/1-5	30	51	43	40	7/1-5	30	51	43	40	7/1-5	
6-9	7.8	16.4	17.6	6.8	12.2	6-9	11	31	37	25	6-9	11	31	37	25	6-9	11	31	37	25	6-9	
Mean-7/5	7.8	16.4	17.6	6.8	12.2	Mean-7/5	16.2	25.6	27.2	22.2	Mean-7/5	16.2	25.6	27.2	22.2	22.8	16.2	25.6	27.2	22.2	22.8	
wt'd index	11.1																					
1988																						
6/11-15	0	2	5	3	3	6/11-15	1	7	17	19	6/11-15	1	7	17	19	6/11-15	1	7	17	19	6/11-15	
16-20	1	3	9	1	4	16-20	1	4	36	44	16-20	1	4	36	44	16-20	1	4	36	44	16-20	
21-25	11	15	8	0	9	21-25	2	6	39	51	21-25	2	6	39	51	21-25	2	6	39	51	21-25	
26-30	10	22	20	8	15	26-30	10	14	51	65	26-30	10	14	51	65	26-30	10	14	51	65	26-30	
7/1-5	8	18	12	4	11	7/1-5	24	31	41	54	7/1-5	24	31	41	54	7/1-5	24	31	41	54	7/1-5	
6-7	2	18	12	4	9	6-9	11	35	26	31	6-9	11	35	26	31	6-9	11	35	26	31	6-9	
Mean-7/5	6.0	12.0	10.8	3.2	8.0	Mean-7/5	7.6	12.4	36.8	46.6	Mean-7/5	7.6	12.4	36.8	46.6	25.8	7.6	12.4	36.8	46.6	25.8	
wt'd index	7.0																					
1989																						
6/11-15	8	8	9	1	7	6/11-15	25	10	4	1	6/11-15	25	10	4	1	6/11-15	25	10	4	1	6/11-15	
16-20	8	12	23	22	16	16-20	20	45	18	8	16-20	20	45	18	8	16-20	20	45	18	8	16-20	
21-25	14	20	26	19	20	21-25	15	57	30	7	21-25	15	57	30	7	21-25	15	57	30	7	21-25	
26-30	14	23	27	18	21	26-30	33	51	36	10	26-30	33	51	36	10	26-30	33	51	36	10	26-30	
7/1-5	21	50	23	33	32	7/1-5	14	45	50	29	7/1-5	14	45	50	29	7/1-5	14	45	50	29	7/1-5	
6-7	32	47	16	29	31	6-8	2	43	41	22	6-8	2	43	41	22	6-8	2	43	41	22	6-8	
Mean-7/5	13.0	22.6	21.6	18.6	19.0	Mean-7/5	21.4	41.7	27.5	10.8	Mean-7/5	21.4	41.7	27.5	10.8	25.2	21.4	41.7	27.5	10.8	25.2	
wt'd index	18.9																					
1990																						
1991																						
1992																						
1993																						
1994																						
1995																						
1996																						
1997																						
1998																						
1999																						
2000																						
2001																						

TABLE 4—cont.

Year/dates	Station			2-8 Means			Year/dates	Station			2-8 Means			Year/dates	Station			2--10 Means																										
	2	4	6	2	4	6		2	4	6	2	4	6		2	4	6	2	4	6	8	10																						
1990																																												
6/11-15	2	5	1	3	1	5	12	4	5	12	4	5	1	5	12	4	5	12	4	5																								
16-20	5	15	4	10	4	5	34	16	14	34	16	14	1	5	34	16	14	34	16	14																								
21-25	8	40	35	13	24	35	16	23	10	30	16	23	10	30	35	16	23	10	30	16																								
26-30	35	96	60	25	54	46	24	33	15	46	24	33	15	46	46	24	33	15	46	24																								
7/1-5	53	47	43	18	40	37	29	34	20	50	37	29	34	20	50	37	29	34	20	50																								
Mean-7/5	20.6	40.6	31.4	12.2	26.2	32.8	17.4	21.7	9.1	27.2	32.8	17.4	21.7	9.1	27.2	32.8	17.4	21.7	9.1	27.2																								
wt'd index																						23.4																						20.8
1991																																												
6/11-15	2	5	1	2	1	2	3	3	1	2	3	3	2	1	2	3	3	2	1	2																								
16-20	14	16	21	7	15	9	11	8	1	9	12	11	8	1	9	12	11	8	1	9																								
21-25	15	25	35	36	28	21	13	11	7	21	13	11	13	7	21	13	11	13	7	21																								
26-30	26	32	22	6	22	5	34	35	5	34	35	12	22	5	34	35	12	22	5	34																								
7/1-5	33	35	32	12	28	18	33	43	18	33	43	17	28	18	33	43	17	28	18	33																								
6-9	17	24	29	8	20	5	19	40	5	19	40	18	20	5	19	40	18	20	5	19																								
Mean-7/5	18.0	22.6	22.2	12.4	19.0	6.4	19.9	21.2	6.4	19.9	21.2	10.7	14.5	6.4	19.9	21.2	10.7	14.5	6.4	19.9																								
wt'd index																						17.5																						13.8
1992																																												
6/11-15	1	2	5	11	5	5	1	3	5	5	1	3	3	5	5	1	3	3	5	5																								
16-20	10	15	21	29	19	22	6	6	7	22	6	6	10	7	22	6	6	10	7	22																								
21-25	13	26	28	46	28	31	33	23	9	31	33	23	24	9	31	33	23	24	9	31																								
26-30	11	29	43	38	30	15	30	44	15	30	44	22	26	15	30	44	22	26	15	30																								
7/1-5	10	55	42	25	33	23	59	36	23	59	36	24	33	23	59	36	24	33	23	59																								
6-9	3	33	41	13	23	12	29	24	12	29	24	15	19.2	12	29	24	15	19.2	12	29																								
Mean-7/5	9.0	25.4	27.8	29.8	23.0	19.2	24	15	19.2	24	15	19.2	19.0	19.2	24	15	19.2	19.0	19.2	24																								
wt'd index																						24.4																						19.0

TABLE 5. Average chum salmon catch off Port Moller by station and 5-day period; number caught by 100 fm fished for 1 h.

Year/dates	2-8						2-10					
	Station			Means			Station			Means		
	2	4	6	8	6	8	2	4	6	8	10	2-10
1985												
6/11-15	0.1	0.2	0.9	0.5	0.4	0.4	0.3	0.5	2.0	0.6	0.6	1.2
16-20	0.2	0.5	1.5	1.0	0.8	0.8	0.0	0.3	1.9	1.1	0.8	0.9
21-25	0.0	0.2	0.2	1.4	0.5	0.5	0.7	0.1	0.8	0.6	0.6	0.9
26-30	1.3	0.7	0.6	2.7	1.3	1.3	1.5	0.5	1.9	7.2	2.8	2.1
7/1-5	1.0	0.8	0.3	1.6	0.9	0.9	1.3	1.4	0.9	1.5	1.3	1.9
6	0.0	4.4	5.4	2.9	3.2	3.2	6-10	2.9	3.0	1.7	2.2	1.1
Mean-7/5	0.5	0.5	0.7	1.4	0.8	0.8	Mean-7/5	0.8	0.6	1.5	2.2	1.4
wt'd index	0.9											
1987												
6/11-15	0.0	0.6	0.2	0.3	0.3	0.3	0.9	0.5	4.9	0.7	1.8	
16-20	0.3	0.8	1.5	0.2	0.7	0.7	16-20	0.9	2.3	3.7	2.1	
21-25	0.6	0.7	3.3	1.9	1.6	1.6	21-25	0.9	2.4	4.4	2.3	
26-30	0.1	0.8	1.2	1.4	0.9	0.9	26-30	0.8	0.3	1.1	0.8	
7/1-5	0.1	0.0	0.7	0.5	0.3	0.3	7/1-5	0.5	1.2	2.1	1.4	
6-9	0.4 0.9 0.4 0.8 0.6											
Mean-7/5	0.2	0.6	1.4	0.9	0.8	0.8	Mean-7/5	0.8	1.3	3.2	1.2	1.7
wt'd index	0.8											
1988												
6/11-15	0.0	0.1	1.2	0.6	0.5	0.5	6/11-15	0.1	0.5	1.7	0.8	0.8
16-20	0.2	0.5	0.9	0.4	0.5	0.5	16-20	0.4	0.4	1.0	0.9	0.7
21-25	0.7	2.0	1.4	0.8	1.2	1.2	21-25	0.0	0.7	0.5	1.7	0.7
26-30	0.7	3.7	2.1	2.0	2.1	2.1	26-30	0.3	0.4	1.4	1.7	1.0
7/1-5	0.6	2.8	1.3	1.4	1.5	1.5	7/1-5	0.4	0.1	0.1	0.9	0.4
6-7	0.5 1.6 0.7 5.1 2.0											
Mean-7/5	0.4	1.8	1.4	1.0	1.2	1.2	Mean-7/5	0.2	0.4	0.8	1.2	0.7
wt'd index	1.1											
1989												
6/11-15	0.2	0.4	0.7	0.5	0.5	0.5	6/11-15	1.7	1.4	2.1	1.2	1.6
16-20	0.1	0.4	0.8	1.2	0.6	0.6	16-20	1.0	2.9	1.4	3.0	2.1
21-25	0.7	0.7	1.2	1.9	1.1	1.1	21-25	0.5	1.7	3.2	1.5	1.7
26-30	0.7	0.9	0.3	1.9	1.0	1.0	26-30	0.8	2.0	2.1	1.1	1.5
7/1-5	0.9	2.3	0.5	1.8	1.4	1.4	7/1-5	0.8	1.3	0.9	1.2	1.1
6-7	0.9 1.0 0.2 3.8 1.5											
Mean-7/5	0.5	0.9	0.7	1.5	0.9	0.9	Mean-7/5	1.0	1.9	1.9	1.6	1.6
wt'd index	1.0											
1990												
6/11-15	0.0	0.0	0.0	0.0	0.0	0.0	6/11-15	0.0	0.0	0.0	0.0	0.0
16-20	0.0	0.0	0.0	0.0	0.0	0.0	16-20	0.0	0.0	0.0	0.0	0.0
21-25	0.0	0.0	0.0	0.0	0.0	0.0	21-25	0.0	0.0	0.0	0.0	0.0
26-30	0.0	0.0	0.0	0.0	0.0	0.0	26-30	0.0	0.0	0.0	0.0	0.0
7/1-5	0.0	0.0	0.0	0.0	0.0	0.0	7/1-5	0.0	0.0	0.0	0.0	0.0
6-9	0.0 0.0 0.0 0.0 0.0											
Mean-7/5	0.0	0.0	0.0	0.0	0.0	0.0	Mean-7/5	0.0	0.0	0.0	0.0	0.0
wt'd index	0.0											
1991												
6/11-15	0.0	0.0	0.0	0.0	0.0	0.0	6/11-15	0.0	0.0	0.0	0.0	0.0
16-20	0.0	0.0	0.0	0.0	0.0	0.0	16-20	0.0	0.0	0.0	0.0	0.0
21-25	0.0	0.0	0.0	0.0	0.0	0.0	21-25	0.0	0.0	0.0	0.0	0.0
26-30	0.0	0.0	0.0	0.0	0.0	0.0	26-30	0.0	0.0	0.0	0.0	0.0
7/1-5	0.0	0.0	0.0	0.0	0.0	0.0	7/1-5	0.0	0.0	0.0	0.0	0.0
6-9	0.0 0.0 0.0 0.0 0.0											
Mean-7/5	0.0	0.0	0.0	0.0	0.0	0.0	Mean-7/5	0.0	0.0	0.0	0.0	0.0
wt'd index	0.0											
1992												
6/11-15	0.0	0.0	0.0	0.0	0.0	0.0	6/11-15	0.0	0.0	0.0	0.0	0.0
16-20	0.0	0.0	0.0	0.0	0.0	0.0	16-20	0.0	0.0	0.0	0.0	0.0
21-25	0.0	0.0	0.0	0.0	0.0	0.0	21-25	0.0	0.0	0.0	0.0	0.0
26-30	0.0	0.0	0.0	0.0	0.0	0.0	26-30	0.0	0.0	0.0	0.0	0.0
7/1-5	0.0	0.0	0.0	0.0	0.0	0.0	7/1-5	0.0	0.0	0.0	0.0	0.0
6-9	0.0 0.0 0.0 0.0 0.0											
Mean-7/5	0.0	0.0	0.0	0.0	0.0	0.0	Mean-7/5	0.0	0.0	0.0	0.0	0.0
wt'd index	0.0											
1993												
6/11-15	0.0	0.0	0.0	0.0	0.0	0.0	6/11-15	0.0	0.0	0.0	0.0	0.0
16-20	0.0	0.0	0.0	0.0	0.0	0.0	16-20	0.0	0.0	0.0	0.0	0.0
21-25	0.0	0.0	0.0	0.0	0.0	0.0	21-25	0.0	0.0	0.0	0.0	0.0
26-30	0.0	0.0	0.0	0.0	0.0	0.0	26-30	0.0	0.0	0.0	0.0	0.0
7/1-5	0.0	0.0	0.0	0.0	0.0	0.0	7/1-5	0.0	0.0	0.0	0.0	0.0
6-9	0.0 0.0 0.0 0.0 0.0											
Mean-7/5	0.0	0.0	0.0	0.0	0.0	0.0	Mean-7/5	0.0	0.0	0.0	0.0	0.0
wt'd index	0.0											
1994												
6/11-15	0.0	0.0	0.0	0.0	0.0	0.0	6/11-15	0.0	0.0	0.0	0.0	0.0
16-20	0.0	0.0	0.0	0.0	0.0	0.0	16-20	0.0	0.0	0.0	0.0	0.0
21-25	0.0	0.0	0.0	0.0	0.0	0.0	21-25	0.0	0.0	0.0	0.0	0.0
26-30	0.0	0.0	0.0	0.0	0.0	0.0	26-30	0.0	0.0	0.0	0.0	0.0
7/1-5	0.0	0.0	0.0	0.0	0.0	0.0	7/1-5	0.0	0.0	0.0	0.0	0.0
6-9	0.0 0.0 0.0 0.0 0.0											
Mean-7/5	0.0	0.0	0.0	0.0	0.0	0.0	Mean-7/5	0.0	0.0	0.0	0.0	0.0
wt'd index	0.0											
1995												
6/11-15	0.0	0.0	0.0	0.0	0.0	0.0	6/11-15	0.0	0.0	0.0	0.0	0.0
16-20	0.0	0.0	0.0	0.0	0.0	0.0	16-20	0.0	0.0	0.0	0.0	0.0
21-25	0.0	0.0	0.0	0.0	0.0	0.0	21-25	0.0	0.0	0.0	0.0	0.0
26-30	0.0	0.0	0.0	0.0	0.0	0.0	26-30	0.0	0.0	0.0	0.0	0.0
7/1-5	0.0	0.0	0.0	0.0	0.0	0.0	7/1-5	0.0	0.0	0.0	0.0	0.0
6-9	0.0 0.0 0.0 0.0 0.0											
Mean-7/5	0.0	0.0	0.0	0.0	0.0	0.0	Mean-7/5	0.0	0.0	0.0	0.0	0.0
wt'd index	0.0											
1996												
6/11-15	0.0	0.0	0.0	0.0	0.0	0.0	6/11-15	0.0	0.0	0.0	0.0	0.0
16-20	0.0	0.0	0.0	0.0	0.0	0.0	16-20	0.0	0.0	0.0	0.0	0.0
21-25	0.0	0.0	0.0	0.0	0.0	0.0	21-25	0.0	0.0	0.0	0.0	0.0
26-30	0.0	0.0	0.0	0.0	0.0	0.0	26-30	0.0	0.0	0.0	0.0	0.0
7/1-5	0.0	0.0	0.0	0.0	0.0	0.0	7/1-5	0.0	0.0	0.0	0.0	0.0
6-9	0.0 0.0 0.0 0.0 0.0											
Mean-7/5	0.0	0.0	0.0	0.0	0.0	0.0	Mean-7/5	0.0	0.0	0.0	0.0	0.0
wt'd index	0.0											
1997												
6/11-15	0.0	0.0	0.0	0.0	0.0	0.0	6/11-15	0.0	0.0	0.0	0.0	0.0
16-20	0.0	0.0	0.0	0.0	0.0	0.0	16-20	0.0	0.0	0.0	0.0	0.0
21-25	0.0	0.0	0.0	0.0	0.0	0.0	21-25	0.0	0.0	0.0	0.0	0.0
26-30	0.0	0.0	0.0	0.0	0.0	0.0	26-30	0.0	0.0	0.0	0.0	0.0
7/1-5	0.0	0.0	0.0	0.0	0.0	0.0	7/1-5	0.0	0.0	0.0	0.0	0.0
6-9	0.0 0.0 0.0 0.0 0.0											
Mean-7/5	0.0	0.0	0.0	0.0	0.0	0.0	Mean-7/5	0.0	0.0	0.0	0.0	0.0
wt'd index	0.0											
1998												
6/11-15	0.0	0.0	0.0	0.0	0.0	0.0	6/11-15	0.0	0.0	0.0	0.0	0.0
16-20	0.0	0.0	0.0	0.0	0.0	0.0	16-20	0.0	0.0	0.0	0.0	0.0
21-25	0.0	0.0	0.0	0.0	0.0	0.0	21-25	0.0	0.0	0.0	0.0	0.0
26-30	0.0	0.0	0.0	0.0	0.0	0.0	26-30	0.0	0.0	0.0	0.0	0.0
7/1-5	0.0	0.0	0.0	0.0	0.0	0.0	7/1-5	0.0	0.0	0.0	0.0	0.0
6-9	0.0 0.0 0.0 0.0 0.0											
Mean-7/5	0.0	0.0	0.0	0.0	0.0	0.0	Mean-7/5	0.0	0.0	0.0	0.0	0.0
wt'd index	0.0											
1999												
6/11-15	0.0	0.0	0.0	0.0	0.0	0.0	6/11-15	0.0	0.0	0.0	0.0	0.0
16-20	0.0	0.0	0.0	0.0	0.0	0.0	16-20	0.0	0.0	0.0	0.0	0.0
21-25	0.0	0.0	0.0	0.0	0.0	0.0	21-25	0.0	0.0	0.0	0.0	0.0
26-30	0.0	0.0	0.0	0.0	0.0	0.0	26-30	0.0	0.0	0.0	0.0	0.0
7/1-5	0.0	0.0	0.0	0.0	0.0	0.0	7/1-5	0.0	0.0	0.0	0.0	0

TABLE 6. Average lengths and weights from Bristol Bay catches.

Average length (mm)	Average weight (lbs)	Average length (mm)	Average weight (lbs)	Average length (mm)	Average weight (lbs)
490	4.0	530	5.3	570	6.7
495	4.1	535	5.5	575	6.8
500	4.3	540	5.7	580	7.0
505	4.5	545	5.8	585	7.2
510	4.6	550	6.0	590	7.4
515	4.8	555	6.2	595	7.5
520	5.0	560	6.3	600	7.7
525	5.2	565	6.5	605	7.9

TABLE 7. Daily sockeye salmon catches in Bristol Bay.

Date	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01
-6/23	.7	.9	.7	.2	.3	1.5	1.5	.3	.1	.6	3.1	.1	.8	.7	.9	.3	.1	1.5	
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.9	.0	.0	.7	.2	.0	.0	.0	
25	.0	.2	.0	.0	.2	.0	.2	.0	.0	.7	1.2	.1	1.0	1.0	.3	.2	.0	1.2	
26	.4	1.0	.0	.0	.0	.1	.7	.0	.0	.0	1.9	.0	.5	.6	.0	.0	.0	.9	
27	2.4	.2	1.0	.0	.6	.9	.1	.0	.0	1.0	1.6	.2	1.8	.7	.5	.2	.0	.8	
28	.8	.0	1.1	.1	.0	.2	1.2	.1	.0	.0	2.2	.0	1.9	1.4	.4	.0	.0	1.5	
29	1.4	.9	1.8	.0	.4	.9	1.8	1.1	.0	.5	2.2	.2	1.9	2.2	.2	.0	.5	2.6	
30	2.8	1.0	2.9	.0	1.1	.0	.9	1.0	.6	1.4	1.5	.1	2.0	2.2	.5	.3	1.1	1.6	
7/1	1.7	1.6	.4	.3	.2	1.7	.7	.4	1.7	.8	1.8	.6	2.2	2.5	.9	.3	3.1	1.0	
2	2.1	1.2	1.9	.8	1.1	.5	3.0	2.1	1.7	.7	5.3	2.1	1.4	2.0	.4	.4	4.0	1.1	
3	3.1	.2	.7	2.0	.2	.4	1.0	3.4	1.6	1.9	2.5	1.1	1.5	1.6	.7	.2	.5	1.0	
4	2.3	.8	.9	.6	1.1	.1	2.3	1.3	2.8	1.8	2.2	.9	2.5	1.3	.7	.2	1.3	1.2	
5	2.5	1.9	1.3	1.5	.0	.6	.8	2.8	1.8	3.2	2.4	2.0	2.2	1.5	1.1	.3	2.1	1.1	
6	2.3	.9	1.3	.3	.2	.3	2.8	2.6	1.1	1.8	1.9	2.5	2.9	1.6	.7	1.9	1.9	.8	
7	1.6	1.2	1.4	.9	1.2	.1	1.5	1.8	1.7	1.3	2.2	2.9	2.6	1.5	.9	.9	.9	.5	
8	1.9	1.6	1.1	.0	.5	.4	.7	2.4	1.6	1.3	2.0	2.4	1.4	1.7	.5	.8	.8	.2	
9	1.3	2.1	1.0	1.7	1.2	.5	.9	1.8	2.2	2.0	1.7	3.5	2.1	1.2	.9	.9	.9	.1	
10	1.8	1.9	1.1	.5	1.1	.2	1.1	1.9	2.0	2.6	1.0	2.5	2.2	.9	.0	.9	.9	.4	
11	1.8	.9	1.3	2.1	.9	1.1	1.5	1.8	1.9	1.5	.8	1.5	2.2	.7	.5	1.5	1.5	.5	
12	1.5	.9	1.2	.7	1.2	.7	1.6	1.8	1.1	.8	.6	1.4	1.8	.6	.2	.7	.7	.5	
13	1.6	1.2	.5	1.5	1.4	.9	1.2	1.2	.7	1.0	.5	1.1	1.0	.5	.4	1.0	1.0	.5	
14	.8	1.3	.3	.6	.6	.7	.4	1.3	.7	1.9	.4	1.5	1.7	.3	.4	.8	.8	.3	
15	.3	1.0	.1	.5	.5	.4	.7	1.0	.5	1.6	.2	1.9	2.3	.6	.2	.5	.5	.2	
16	.4	.7	.3	.4	.4	.4	.5	.7	.6	1.2	.2	1.3	.7	.4	.1	.4	.3	.4	
17	.1	.4	.2	.3	.5	.2	.5	.8	.4	.8	.1	1.4	1.2	.4	.1	.3	.6	.1	
18	.4	.2	.2	.2	.2	.1	.4	.5	.3	.4	.1	.9	1.0	.2	.1	.5	.5	.1	
7/19-	.6	.3	.9	.5	.9	.3	.7	1.2	1.1	1.3	.1	2.8	.5	.5	.3	.4	1.5	.5	
Total	37	25	24	16	16	14	29	33	26	32	41	35	44	30	12	10	26	21	
Run	46	41	37	24	27	23	44	48	42	45	52	50	61	37	19	18	39	28	

□ date of 50% of total catch.

TABLE 8. Preseason forecasts of the 2001 Bristol Bay inshore run.

District	Age					Total	Catch	Catch thru 10-Jul
	1.2	2.2	0.3	1.3	2.3			
1. ADF&G								
Naknek/Kvichak	1.6	1.5	0	2.2	0.6	5.9	2.6	3.7
Egegik	0.6	2.9	0	0.9	2.7	7.1	6.0	6.2
Ugashik	0.4	0.8	0	0.6	0.3	2.1	1.3	5.6
Nushagak	1.7	1.8	0	3.7	0.3	7.3	5.4	1.1
Togiak	0.1	0	0	0.3	0	0.4	0.3	0.2
TOTAL	4.4	7.0	0.0	7.7	3.9	22.8	15.6	
Percent	19	31	0	34	17			
2. FRI								
Naknek/Kvichak	2.5	1.5		1.6	0.9	6.5	3.0	3.7
Egegik	0.6	1.2		2.2	1.3	5.3	4.0	6.2
Ugashik	0.4	0.3		0.2	0.5	1.4	0.7	5.6
Nushagak	2.5	0.2	0.1	4.8	0.3	7.9	5.9	1.1
Togiak	0.1	0.0		0.3	0.0	0.4	0.2	0.2
TOTAL	6.1	3.2	0.1	9.1	3.0	21.5	13.8	
Percent	28	15	0	42	14			

TABLE 9. Daily sockeye salmon catches in the South Unimak June fishery, 1986-2000.

Date	Year																			
	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00					
11														54*						
12														2*						
13					12			284			138	46*	65*	39*	77					
14	55	44		34								53*	65*	80	73					
15		48	43			124	223	255			213	44*	86*	143	38					
16	31		79	361	69		143	305			73	6	62*	101*	154	56				
17		85			147	53	258	304	133	62	71	57*	96*	158	44					
18	92	67	59		91	106	345		71	10	56	99	77	103	40					
19				133	34	110	371	350	172	10	60	105	23*	159	42					
20		56		441	82	226		492	53	77	63	116	66	86	51					
21	66	98	82		122		359		42	168	66	81	44	128	69					
22		76	35		120		354	203	96	151	63	78	32	closed	51					
23	21		116	265	106	189			132	161	2	73	81		52					
24	17				88	262			66	128	22	78	55		45					
25	25	45				146			47	83	10	79	28		41					
Totals																				
13-20	178	300	181	935	469	619	1340	1990	429	583	317	577	579	883	488					
13-25	307	519	414	1200	905	1216	2053	2193	812	1274	480	966	819	1011	628					
13-30	315	653	474	1348	1091	1216	2053	2367	1001	1451	572	1198	976	1011	892					
Quota	907	635	1263	1199	1087	1573	1959	2375	2938	2987	2564	1840	1528	1070	1649					
BB run	24	27	23	44	48	42	45	52	50	61	37	19	18	39	28					

* Gillnet fleet only, purse seines on strike.
 Strong winds on the 19th, 21st and 22nd, 1998.

The Daily Almanac

Through June 20
1987-2000

District Catch	Cumulative through 6/20				River Escapement	Cumulative through 6/20			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	59	1	0	6	Kvichak	0	0	0	0
Egegik	102	1	0	3	Naknek	0	0	0	0
Nushagak	6	0	0	1	Egegik	8	1	0	4
					Wood	0	0	0	0
Togiak	3	1	0	3	Igushik	0	0	0	0
Ugashik	18	1	0	4	Nushagak	4	1	0	3
					Togiak	0	0	0	0
					Ugashik	0	0	0	0
All districts	267	1	0	4					

Port Moller sockeye index	Cumulative		Forecast of total run (millions)
	6/20 daily	through 6/20	
1987-2000			
Average	70	384	In past years the index through 6/20 accounted for 26% of the variation in Bristol Bay runs (61% excluding 1990, 94 & 97)
Lowest	19	114	
Highest	118	762	

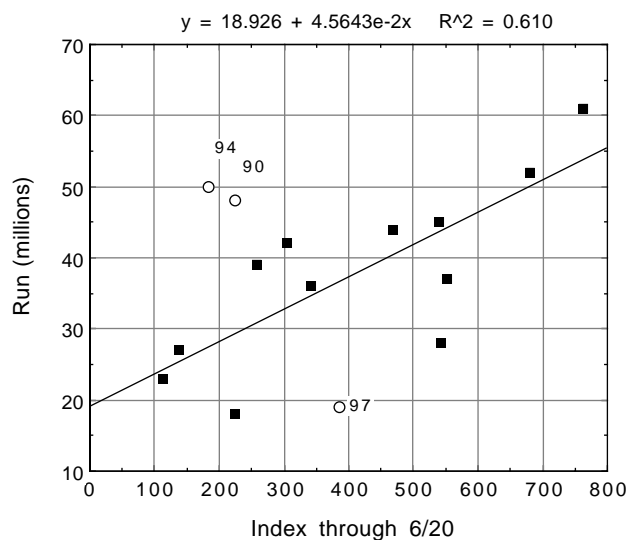
2001=

(2001 cumulative index)X(.046)+(18.9)= total run

Bristol Bay runs 1987- 1987-2000

Average	39
Lowest	18
Highest	61

example: if 2001 index was 384 (average for past years) we would forecast the total run by: (384)X(.046)+18.9= 36.6 a run of 37 million



Comments

This is the first date that the Port Moller test fishery catches are used to forecast the total run. Prior to 6/19, Port Moller catches explained less than 50% of the variation in past runs. Sockeye passing Port Moller on this date will arrive in the Bay 6 to 9 days later (main body of the run). If water temperatures at Port Moller are averaging less than 4 C, we would expect a late run and if temperatures are over 8 C we can expect an early run.

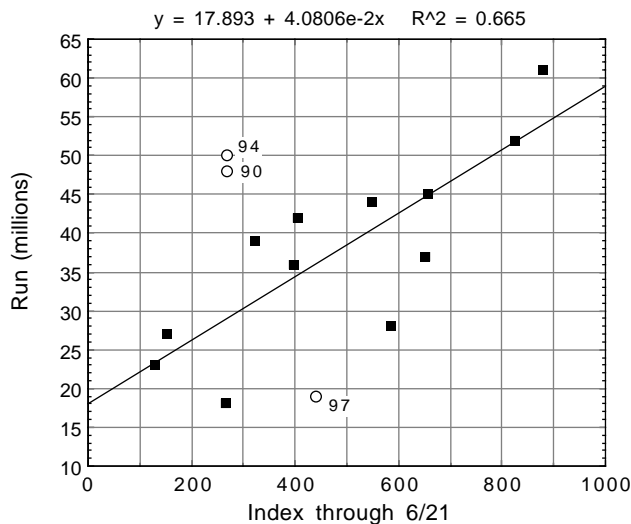
There was very little fishing effort through June 20 and, in recent years, little fishing time, so catches were usually small through this date (except for the early runs in 1993 & 2000).

Tower counting usually begins now in the major rivers but few fish are present.

Through June 21
1987-2000

District Catch	Cumulative through 6/21				River Escapement	Cumulative through 6/21			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	81	1	0	7	Kvichak	0	0	0	0
Egegik	159	1	0	6	Naknek	2	0	0	1
Nushagak	8	0	0	1	Egegik	22	2	0	10
Togiak	3	1	0	6	Wood	1	0	0	1
Ugashik	25	1	0	5	Igushik	0	0	0	0
All districts	406	2	0	6	Nushagak	4	1	0	3
					Togiak	0	0	0	0
					Ugashik	0	0	0	0

Port Moller sockeye index	Cumulative 6/21 daily	Cumulative through 6/21	Forecast of total run (millions)
1987-2000			In past years the index through 6/21 accounted for 32% of the variation in Bristol Bay runs (67% excluding 1990, 94 & 97).
Average	73	457	
Lowest	14	128	
Highest	144	878	
2000=			(2001 cumulative index)X(.041)+(17.9)= total run
Bristol Bay runs 1987-2000			example: if 2001 index was 457 (average for past years) we would forecast the total run by: (457)X(.041)+17.9= 36.6 a run of 37 million
Average	39		
Lowest	18		
Highest	61		



Comments

The Port Moller index through June 21, 1994 was only 269 (well below average) yet the run turned out to be 50 million (the 3rd largest in recent years). Except for 1990,94&97, the relation between index catch and run is very close. The Port Moller test boat has been blown out 4 out of 15 years on this date.

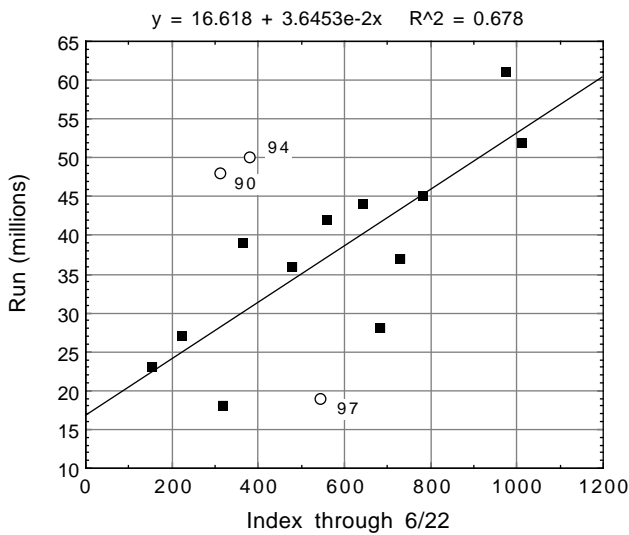
Bristol Bay catches were usually small on this date (except for the early 1993 & 2000 runs)

There were Egegik escapements on this date only in 1989, 92, 93, 95-97, & 2000. Usually, escapements are in the hundreds of fish this early in the season.

Through June 22
1987-2000

District Catch	Cumulative through 6/22				River Escapement	Cumulative through 6/22			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	176	3	0	10	Kvichak	1	0	0	0
Egegik	242	2	0	8	Naknek	3	0	0	2
Nushagak	12	0	0	1	Egegik	39	3	0	20
Togiak	5	2	0	8	Wood	2	0	0	1
Ugashik	38	2	0	5	Igushik	0	0	0	0
All districts	599	2	0	9	Nushagak	6	1	0	4
					Togiak	0	0	0	0
					Ugashik	0	0	0	0

Port Moller sockeye index	Cumulative 6/22 through daily 6/22		Forecast of total run (millions)
1987-2000			
Average	92	549	In past years the index through 6/22 accounted for 33% of the variation in Bristol Bay runs (68% excluding 1990, 94 & 97).
Lowest	26	154	
Highest	188	1012	
2001=			
			(2001 cumulative index)X(.036)+(16.6)= total run
Bristol Bay runs 1987-2000			
Average	39		example: if 2001 index was 1012 (highest for past years) we would forecast the total run by: (1012)X(.036)+16.6= 53.0 a run of 53 million
Lowest	18		
Highest	61		



Comments

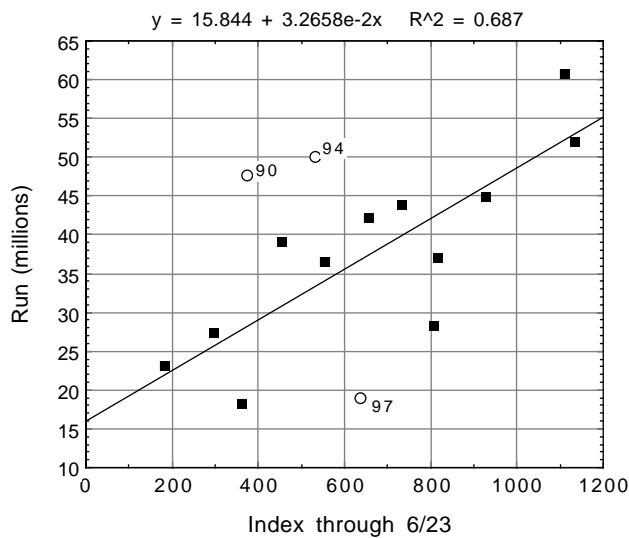
In 1988, some fish arrived early in the Bay and provided exceptional catches at Egegik (14% of total catch through 6/22). This led some to expect a large run that unfortunately did not materialize. The low index catches at Port Moller correctly forecast the relatively small run of 23 million. In contrast, the large 1990 & 94 runs were slow to develop, both at Port Moller and in the Bay. The indices through the 22nd (313 & 379) did not indicate runs of 48 & 50 million were on the way.

The high Port Moller index (188) on June 22, 1993 did correctly indicated that a large and early run (52 million) was coming.

Through June 23
1987-2000

District Catch	Cumulative through 6/23				River Escapement	Cumulative through 6/23			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	238	3	0	14	Kvichak	2	0	0	0
Egegik	402	4	0	11	Naknek	6	0	0	2
Nushagak	30	1	0	5	Egegik	59	4	0	30
Togiak	7	2	0	9	Wood	7	1	0	3
Ugashik	45	2	0	6	Igushik	1	0	0	1
All districts	841	4	0	11	Nushagak	9	2	0	5
					Togiak	0	0	0	0
					Ugashik	0	0	0	0

Port Moller sockeye index	Cumulative 6/23 daily	Cumulative through 6/23	Forecast of total run (millions)
1987-2000			
Average	96	645	In past years the index through 6/23 accounted for 36% of the variation in Bristol Bay runs (69% excluding 1990, 94 & 97).
Lowest	28	181	
Highest	152	1135	
2001=			
(2001 cumulative index)X(.033)+(15.8)= total run			
example: if the 2001 index was 181 (lowest for past years) he would forecast the total run by: (181)X(.033)+15.8= 21.8 a run of 22 million			
Bristol Bay runs 1987-2000			
Times	39		
Lowest	18		
Highest	61		



Comments

The accuracy of forecasts from the Port Moller catches through 6/23 is still rather poor because of the 1990, 94 & 97 indices and runs (374, 531, & 637) with runs of 48, 50 & 19 million); however, for other years, there has been a very close correlation between the index and the final run.

There were major fishery openings on this date in only 7 of the past 14 years. The catches were 311,000 (88), 569,000 (89), 432,000 (92), 379,000 (93), 444,000 (95), 419,000 (97) & 377,000 in 2000.

There was only one opening (1993) in the Nushagak over the past 14 years on 6/23.

Escapements are just beginning at Naknek and Wood River towers. Egegik has had 2,000 or more past the tower on this date in 10 of the past 14 years. The largest daily escapement at Egegik in 1993 (156,000) occurred on this early date.

Through June 24
1987-2000

District Catch	Cumulative through 6/24				River Escapement	Cumulative through 6/24			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	246	3	0	14	Kvichak	3	0	0	1
Egegik	522	5	0	13	Naknek	13	1	0	5
Nushagak	35	1	0	5	Egegik	78	6	0	36
Togiak	8	3	0	9	Wood	16	1	0	7
Ugashik	45	2	0	6	Igushik	2	1	0	3
All districts	979	4	0	11	Nushagak	16	3	0	13
					Togiak	0	0	0	0
					Ugashik	0	0	0	0

1987-2000 Port Moller sockeye index	Cumulative 6/24 daily	Cumulative through 6/24	Forecast of total run (millions)
Average	108	751	
Lowest	50	231	
Highest	180	1234	

In past years the index through 6/24 accounted for 41% of the variation in Bristol Bay runs (72% excluding 1990, 94 & 97).

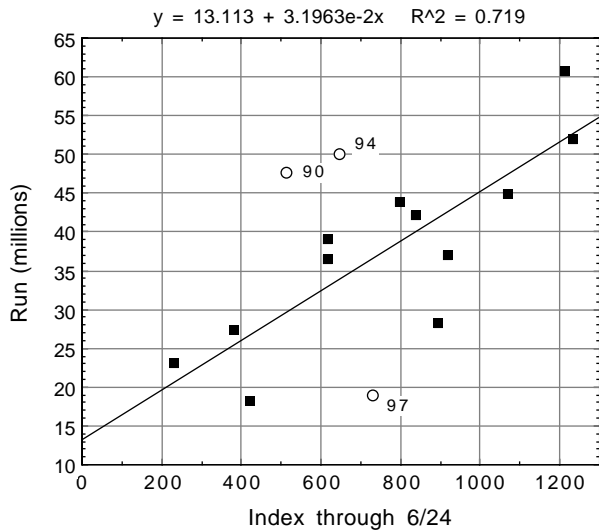
2001=

$$(2001 \text{ cumulative index}) \times (.032) + (13.1) = \text{total run}$$

Bristol Bay runs 1987-2000

Average	39
Lowest	18
Highest	61

example: if 2001 index was 751 (average for past years) we would forecast the total run by: $(751) \times (.032) + 13.1 = 37.1$ a run of 37 million



Comments

The relation between the Port Moller index catch and the total Bristol Bay run improves on this date, but the 1990, 94 & 97 indices and runs are still unusual. The test boat has been blown out on the 24th 5 times in the past 14 years. Sockeye passing Port Moller on this date will arrive in Bristol Bay about July 1-2.

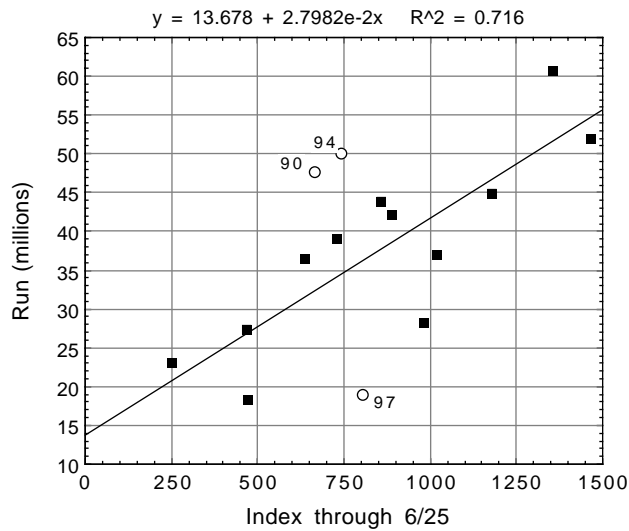
There have been only three major fishery openings on this date (Egegik, 93, 96 & 97) during the past 14 yrs. On average, 4% of the Nushagak runs, 6% of the Nak/Kvichak runs, and 8% of the Egegik runs passed through the fishing district by this date.

The Naknek tower count was 1,000 or more on this date in every year except 1987, whereas the Kvichak tower count was less than 1,000 except in 1992, 93, and 97.

Through June 25
1987-2000

District Catch	Cumulative through 6/25				River Escapement	Cumulative through 6/25			
	average 1,000s	Percent of season total (%) Average	Low	High		average 1,000s	Percent of season total (%) Average	Low	High
Naknek/Kvichak	284	4	0	21	Kvichak	10	0	0	1
Egegik	879	8	0	22	Naknek	50	4	0	13
Nushagak	69	2	0	5	Egegik	101	7	0	41
Togiak	9	3	0	9	Wood	31	2	0	11
Ugashik	56	2	0	6	Igushik	3	1	0	4
All districts	1423	6	1	13	Nushagak	25	5	0	16
					Togiak	0	0	0	0
					Ugashik	0	0	0	0

1987-2000 Port Moller sockeye index	Cumulative 6/25 daily	Cumulative through 6/25	Forecast of total run (millions)
Average	98	849	In past years the index through 6/25 accounted for 45% of the variation in Bristol Bay runs (72% excluding 1990, 94 & 97)
Lowest	22	253	
Highest	232	1466	
2001=			(2001 cumulative index)X(.028)+(13.7)= total run
Bristol Bay runs 1987-2000			example: if 2001 index was 1466 (highest for past years) we would forecast the total run by: (1466)X(.028)+13.7= 54.7 a run of 55 million
Average	39		
Lowest	18		
Highest	61		



Comments

This is the first date on which we made forecasts from Port Moller index catches in past years. The relation between index and run is now fairly close as we are about 3 days from the mid point of the run at Port Moller.

About this time we will compare the age composition of sockeye at Port Moller with the pre-season forecasts and the average lengths by age & sex will be examined--small fish=large run, large fish=small run. On average 11%,7%,and 5% of the Egegik, Nak/Kvi, and Nushagak runs are through the fisheries by 6/25. There were major fishery openings on this date in 9 of the past 14 years. Catches were 200,000 in 1987 & 1989; 700,000 in 1992; 1,200,000 in 1993; 130,000 in 1994; 1 million in 1995 and 1996; 260,000 in 1997 and 1.2 million in 2000. Escapements are usually just under way, an exception was in 1993 with 10% of the total by 6/25

Through June 26
1987-2000

District Catch	Cumulative through 6/26				River Escapement	Cumulative through 6/26			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	399	6	0	26	Kvichak	37	1	0	4
Egegik	1027	9	0	23	Naknek	77	6	0	18
Nushagak	130	3	0	9	Egegik	144	9	0	28
Togiak	11	4	0	15	Wood	54	4	0	14
Ugashik	63	2	0	6	Igushik	7	2	0	6
All districts	1761	7	1	17	Nushagak	39	8	1	19
					Togiak	0	0	0	0
					Ugashik	0	0	0	0

1987-2000 Port Moller sockeye index	Cumulative 6/26 through 6/26		Forecast of total run (millions)
Average	91	940	In past years the index through 6/26 accounted for 48% of the variation in Bristol Bay runs (72% excluding 1990, 94 & 97).
Lowest	28	305	
Highest	158	1624	

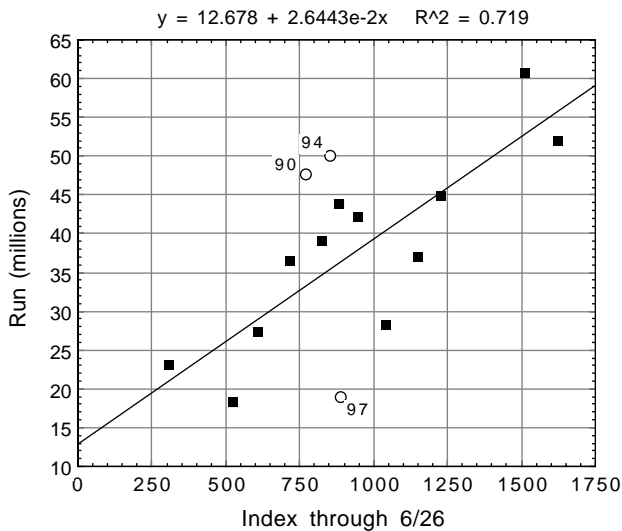
2001=

$$(2001 \text{ cumulative index}) \times (.0264) + (12.7) = \text{total run}$$

Bristol Bay runs 1987-2000

Average	39
Lowest	19
Highest	61

example: if 2001 index was 940 (average for past years) we would forecast the total run by: $(940) \times (.0264) + 12.7 = 37.5$ a run of 38 million



Comments

The weather at Port Moller was fishable on this date every year except 1993. We are about 2 days before the mid point in the run at Port Moller (average timing).

There were only 5 major fishery openings on this date: 1989 (695,000); 1993 (all districts 1,155,000); 1995 (991,000); 1996 (1,005,000) & 2000 (886,000).

On the average through 6/26, 8% of the Nushagak run, 10% of the Naknek/Kvichak run, and 14% of the Egegik run had passed through the fishing district. However in 1993, 17%, 19% and 24% of these runs were through the districts. At the other extreme, only 1% of the BB run was through the districts by 6/26 in 1986.

Through June 27
1987-2000

District Catch	Cumulative through 6/27				River Escapement	Cumulative through 6/27			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	584	8	0	30	Kvichak	101	2	0	8
Egegik	1372	13	0	33	Naknek	109	8	0	20
Nushagak	187	4	0	13	Egegik	192	14	0	53
Togiak	15	5	0	20	Wood	86	6	0	20
Ugashik	67	3	0	9	Igushik	15	4	0	9
All districts	2356	9	1	21	Nushagak	56	11	1	29
					Togiak	0	0	0	0
					Ugashik	0	0	0	0

1987-2000 Port Moller sockeye index	Cumulative 6/27 daily	through 6/27	Forecast of total run (millions)
Average	101	1041	In past years the index through 6/27 accounted for 49% of the variation in Bristol Bay runs (72% excluding 1990, 94 & 97).
Lowest	48	353	
Highest	158	1783	

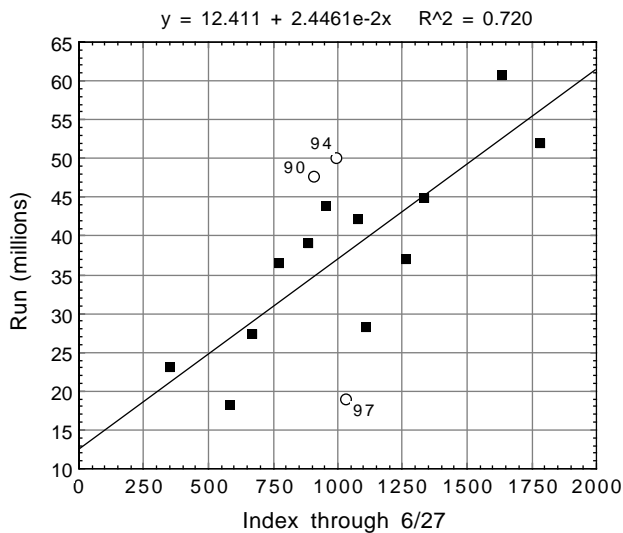
2001=

(2001 cumulative index)X(.024)+(12.4)= total run

Bristol Bay runs 1987-2000

Average	39
Lowest	18
Highest	61

example: if 2001 index was 353 (lowest for past years) we would forecast the total run by: (353)X(.024)+12.4= 20.9 a run of 21 million



Comments

Sockeye passing Port Moller on this date usually take about 7 days to reach the fishing districts. Earlier (6/11-15) the fish take longer (8-10 days) because temperatures are usually colder. The sockeye may take only 5-6 days to reach the districts in July.

On this date, there were only 4 major openings in the Nushagak (1992,1993,1995.00 ; ca 170,000 ea) 470,000 and 1995, 1.1 million) however, there have been 11 openings at Egegik since 1987 with an average catch of 430,000.

The average BB cumulative catch plus escapement on this date was 2.9 million. An average of 8% of the annual runs were accounted for by the C+E through 6/27 as reported by ADF&G.

Through June 28
1987-2000

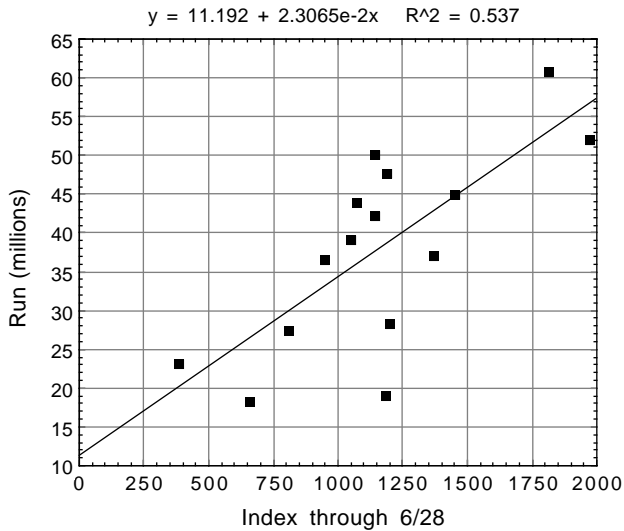
District Catch	Cumulative through 6/28				River Escapement	Cumulative through 6/28			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	728	10	0	36	Kvichak	179	3	0	14
Egegik	1743	17	0	43	Naknek	133	10	0	22
Nushagak	303	7	0	18	Egegik	240	18	0	57
Togiak	18	6	0	25	Wood	112	8	0	28
Ugashik	68	3	1	9	Igushik	29	7	0	16
All districts	2991	11	1	29	Nushagak	75	15	2	40
					Togiak	0	0	0	0
					Ugashik	0	0	0	0

1987-2000 Port Moller sockeye index	Cumulative 6/28 daily	Cumulative through 6/28	Forecast of total run (millions)
Average	132	1175	
Lowest	33	386	
Highest	284	1973	

In past years the index through 6/28 accounted for 54% of the variation in Bristol Bay runs and all years are included in forecasting from this date on.
(2001 cumulative index)X(.023)+(11.2)= total run

Bristol Bay runs 1987-2000	
Average	39
Lowest	18
Highest	61

example: if 2001 index was 1175 (average for past years) we would forecast the total run by: (1175)X(.023)+11.2= 38.2, a run of 38 million



Comments

The average daily index catch (sum of catches at stations 2-8) has been highest on the 28th to 30th, which is about the mid point in the run past Port Moller. The largest recorded daily indices were 284 made on 6/28/90 and 287 made on 6/30/93.

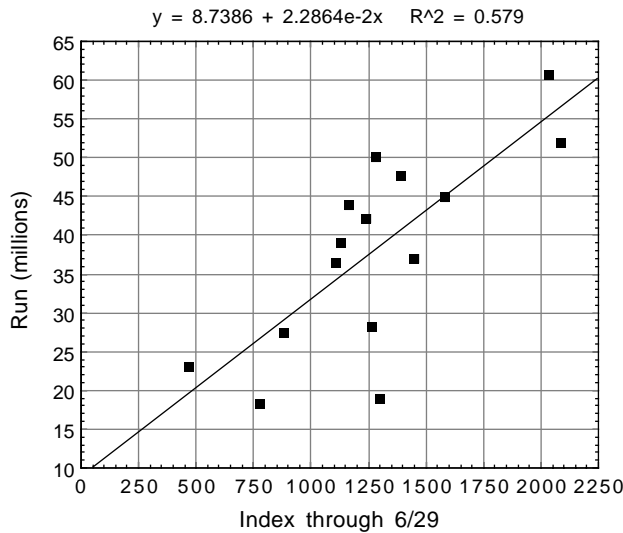
Prior to 1993, when all districts were open with a total catch of 2.2 million, there had been only one major opening on this date for: Egegik (1989; 1.2 million), Naknek/Kvichak (1985; 1.1 million), and Nushagak (1988; 181,000) since 1985. The total BB catch in 1995 was 1.9 million on 6/28.

This has usually been the first date of large escapement to the Kvichak (50,000+); however, there was no escapement through 6/28 in 1986, 87 and 1999, and only 5,000 in 1990 and less than 25,000 in 1996-2000. Naknek has had over 100,000 by 6/28 except in 1987, 94 and 97-99.

Through June 29
1987-2000

District Catch	Cumulative through 6/29				River Escapement	Cumulative through 6/29			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	1053	13	0	46	Kvichak	256	5	0	21
Egegik	2198	21	0	56	Naknek	209	14	0	32
Nushagak	487	11	0	28	Egegik	284	21	0	59
Togiak	22	6	0	29	Wood	146	11	1	33
Ugashik	122	5	0	24	Igushik	40	10	0	22
					Nushagak	92	19	2	45
					Togiak	0	0	0	0
					Ugashik	0	0	0	0
All districts	3981	15	1	41					

1987-2000 Port Moller sockeye index	Cumulative 6/29 through 6/29		Forecast of total run (millions)
Average	114	1290	In past years the index through 6/29 accounted for 58% of the variation in Bristol Bay runs.
Lowest	75	472	
Highest	217	2085	
2001=			(2001 cumulative index)X(.023)+ (8.7)= total run
Bristol Bay runs 1987-2000			example: if the 2001 index was 2085 (highest for past years) we would forecast the total run by: (2085)X(.023)+8.7= 56.7, a run of 57 million.
Average	39		
Lowest	18		
Highest	61		



Comments

The middle of the Bristol Bay run passes Port Moller at this time and index catches have been relatively high in all years. Forecasts from the Port Moller daily cumulative index catches have about the same reliability from 6/29 to 7/3.

Fishery openings on this date in either the Naknek/Kvichak or Egegik districts have produced an average of 600,000 fish. There were only five Nushagak openings on 6/29 since 1987: 1989 (350,000), 93 (570,000), 95 (180,000), 96 (500,000), and 2000 (982,000)

On the average, the cumulative catch plus escapement through 6/29 has accounted for 13% of the final run (range: 1% in 1999 and 36% in 2000).

Through June 30
1987-2000

District Catch	Cumulative through 6/30				River Escapement	Cumulative through 6/30			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	1423	18	0	60	Kvichak	355	7	0	23
Egegik	2686	27	4	62	Naknek	299	19	2	38
Nushagak	624	14	0	37	Egegik	331	24	1	60
Togiak	29	8	0	33	Wood	196	15	1	39
Ugashik	135	5	0	24	Igushik	50	13	0	28
All districts	4953	18	2	49	Nushagak	112	23	2	52
					Togiak	0	0	0	2
					Ugashik	0	0	0	0

1987-2000 Port Moller sockeye index	6/30 daily	Cumulative through 6/30	Forecast of total run (millions)
Average	139	1428	In past years the index through 6/30 accounted for 60% of the variation in Bristol Bay runs.
Lowest	20	523	
Highest	287	2372	

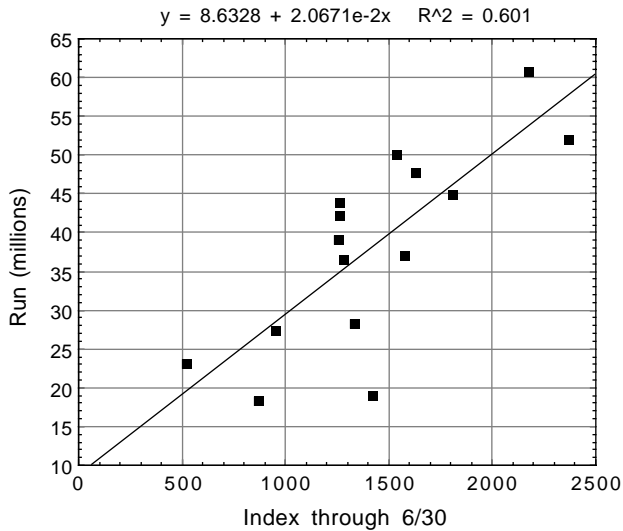
2001=

$$(2001 \text{ cumulative index}) \times (0.021) + (8.6) = \text{total run}$$

Bristol Bay run 1987-2000

Average	39
Lowest	18
Highest	61

example: if the 2001 index was 1428 (average for past years) we would forecast the total run by: $(1428) \times (0.021) + 8.6 = 38.6$, a run of 39 million



Comments

There was an unusually low index on this date in 1991 (20), but index catches averaged 150 in other years. With average or early run timing, a forecast by district can be made with statistics through 6/30 (forecast made on 7/1). With district forecasts, we can then forecast the total Bristol Bay catch.

On the average since 1987, 18% of the Bristol Bay catch was made by the 30th; however, 22% of the Nushagak runs, 27% of the Naknek/Kvichak runs and 33% of the Egegik runs passed through the fishing district by 6/30. In a very early run in 1979, over 50% of the Bristol Bay run was through the districts by the 30th; in contrast, in the late run of 1971, less than 10% of the run was in the districts by the 30th. The runs in 1993 and 2000 were almost as early as the 1979 run.

Through July 1
1987-2000

District Catch	Cumulative through 7/1				River Escapement	Cumulative through 7/1			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	1889	25	0	67	Kvichak	488	9	0	25
Egegik	3225	33	4	62	Naknek	415	25	3	51
Nushagak	854	19	3	47	Egegik	392	28	4	62
Togiak	36	10	1	33	Wood	250	19	1	42
Ugashik	171	6	0	24	Igushik	59	15	1	37
All districts	6074	23	4	54	Nushagak	136	28	4	58
					Togiak	1	0	0	5
					Ugashik	0	0	0	0

1987-2000 Port Moller sockeye index	Cumulative 7/01 daily	Cumulative through 7/01	Forecast of total run (millions)
Average	114	1542	
Lowest	26	568	
Highest	187	2547	

In past years the index through 7/1 accounted for 62% of the variation in Bristol Bay runs, excluding 1997.

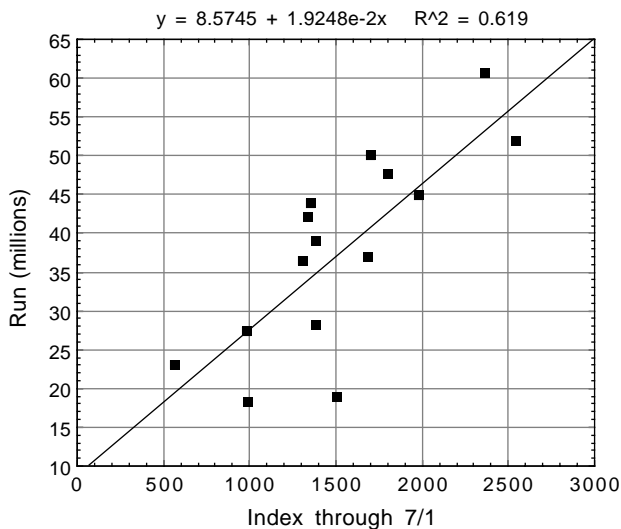
2001=.

(2001 cumulative index)X(.019) + (8.6)= total run

Bristol Bay runs 1987-2000

Average	39
Lowest	18
Highest	61

example: if the 2001 index was 568 (lowest for past years) we would forecast the total run by: (568)X(.019) + 8.6 = 19.4, a run of 19 million



Comments

Over the past 14 years with runs over 40 million, the daily index catches ranged from 79 to 187 on July 1 and the cumulative indices were over 1350.

The average cumulative catch + escapement through 7/1 was 20% of the total Bristol Bay run (range: 3% in 1994 and 47% in 2000).

By July 1, the Kvichak escapements were under way except in 1994. In 1989 and 1993, 25% of the total escapement passed the tower by 7/1.

On average, 37% of the Egegik runs, 33% of Naknek/Kvichak runs, and 28% of Nushagak runs have passed through the fishing districts by July 1.

Through July 2
1987-2000

District Catch	Cumulative through 7/2				River Escapement	Cumulative through 7/2			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	2609	32	2	74	Kvichak	724	14	0	31
Egegik	4039	41	16	64	Naknek	537	32	12	65
Nushagak	1121	26	3	57	Egegik	455	32	7	63
Togiak	43	12	2	33	Wood	341	25	4	49
Ugashik	218	7	0	25	Igushik	72	19	1	48
All districts	7859	29	10	59	Nushagak	165	35	9	61
					Togiak	1	0	0	2
					Ugashik	0	0	0	0

1987-2000 Port Moller sockeye index	Cumulative 7/02 daily	Cumulative through 7/02	Forecast of total run (millions)
Average	111	1653	In past years the index through 7/2 accounted for 61% of the variation in Bristol Bay runs.
Lowest	27	614	
Highest	242	2789	

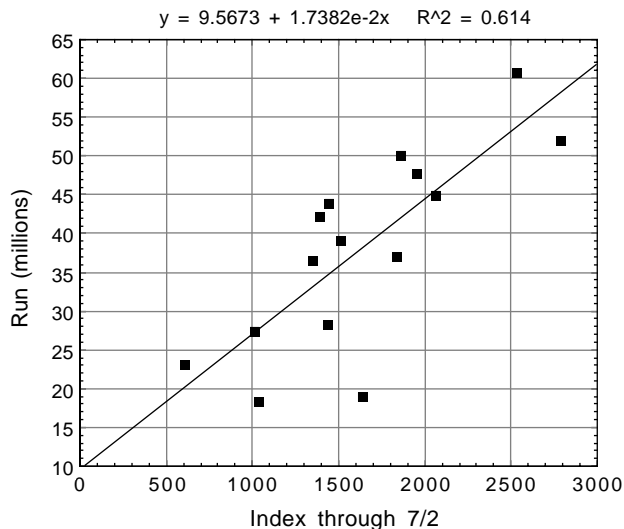
2001=

$$(2001 \text{ cumulative index}) \times (0.017) + (9.6) = \text{total run}$$

Bristol Bay runs 1987-2000

Average	39
Lowest	18
Highest	61

example: if the 2001 index was 2789 (highest for past years) we would forecast the total run by: $(2789) \times (0.017) + 9.6 = 57.0$, a run of 57 million



Comments

The Egegik fishery was open 13 of the past 14 years on 7/2 and the catches ranged from 133,000 to 2.6 million. The average Bristol Bay catch on this date was 1.8 million. The all-time record single-day catch in Bristol Bay (5.3 million) was on 7/2/93. The Nushagak has had a major opening on 7/2 in only 8 of the past 14 years.

Although an average of 30% of the seasons catch was made by 7/2, 43% of the Egegik runs, 40% of the Naknek/Kvichak runs and 34% of the Nushagak runs had passed through the fishing districts by July 2. Escapements have come more from the early part of the runs while catches have come from the later part.

Total catch + escapement through July 2 has averaged 26% of the final run (1987-2000 range: 8%-52%).

Through July 3
1987-2000

District Catch	Cumulative through 7/3				River Escapement	Cumulative through 7/3			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	3008	35	2	77	Kvichak	1035	20	3	40
Egegik	4511	45	23	67	Naknek	667	41	15	74
Nushagak	1402	33	3	63	Egegik	556	37	13	65
Togiak	53	15	3	33	Wood	473	36	8	65
Ugashik	297	10	1	46	Igushik	85	22	2	53
					Nushagak	202	43	16	71
					Togiak	2	1	0	11
All districts	9360	34	13	64	Ugashik	1	1	0	10

1987-2000 Port Moller sockeye index	Cumulative 7/03 daily	7/03	Forecast of total run (millions)
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Average	129	1781
Lowest	23	637
Highest	234	2849

In past years the index through 7/3 accounted for 78% of the variation in Bristol Bay runs, excluding 1997.

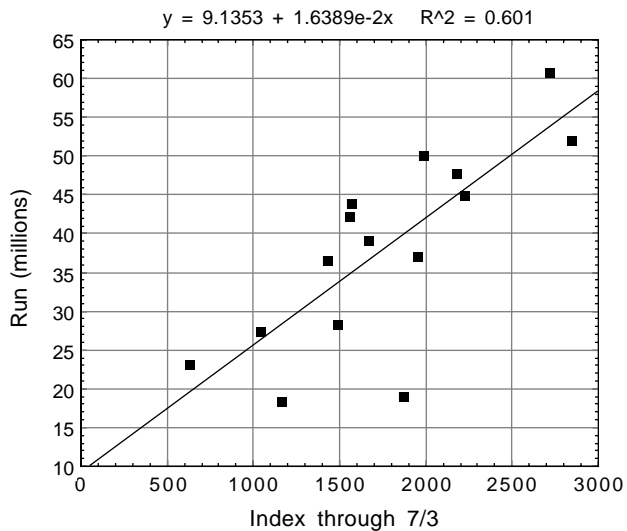
2001=

(2001 cumulative index)X(.016) + (9.1)= total run

Bristol Bay runs 1987-2000

Average	39
Lowest	18
Highest	61

example: if the 2001 index was 2849 (highest for past years) we would forecast the total run by: (2849)X(.016)+9.1 = 54.7, a run of 58 million.



Comments

The middle part of the Bristol Bay run is still passing Port Moller on July 3 and the daily index catches have been over 60 when a large run was on the way.

Major openings at Egegik have produced an average catch of about 1 million on 7/3. The Nushagak was open 13 of the past 14 years on 7/3 and catches averaged 302,000 per opening. Sockeye have usually arrived inside Ugashik Bay by July 3. Openings in 1993, 1995 and 1996 produced catches of 260,000, 215,000 and 198,000. An opening in 2000 produced a catch of 327,000

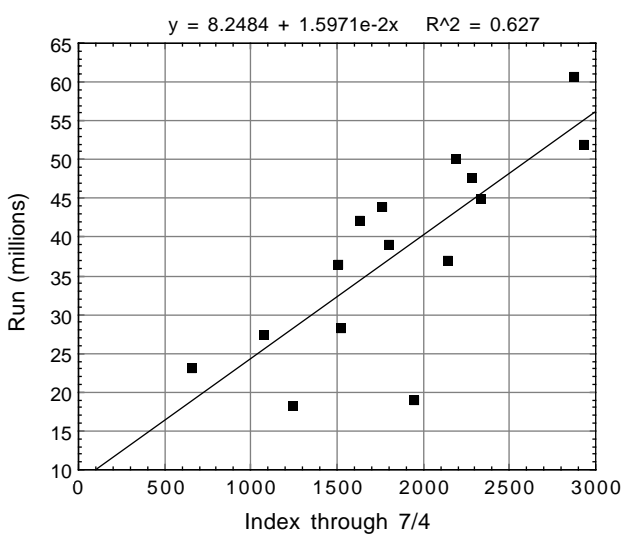
Total catch and escapement through July 3 as reported by ADF&G, has averaged 32% of the final run.

In 13 of the past 14 years the Naknek and Egegik escapements have exceeded 300,000 by 7/3.

Through July 4
1987-2000

District Catch	Cumulative through 7/4				River Escapement	Cumulative through 7/4			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	3475	39	2	78	Kvichak	1434	27	10	53
Egegik	5153	52	27	77	Naknek	797	49	22	80
Nushagak	1569	37	3	65	Egegik	667	43	25	68
Togiak	65	18	4	38	Wood	608	45	13	73
Ugashik	408	15	2	57	Igushik	105	27	8	55
All districts	10712	39	15	70	Nushagak	243	51	25	81
					Togiak	3	2	0	13
					Ugashik	11	2	0	20

1987-2000 Port Moller sockeye index	7/04 daily	Cumulative through 7/04	Forecast of total run (millions)
Average	103	1885	In past years the index through 7/4 accounted for 63% of the variation in Bristol Bay runs.
Lowest	22	659	
Highest	197	2928	
2001 =			(2001 cumulative index)X(.016) + (8.2)= total run
Bristol Bay runs 1987-2000			example: if the 2001 index was 1885 (average for past years) we would forecast the total run by: (1885)X(.016)+8.2 = 38.4, a run of 38 million
Average	39		
Lowest	18		
Highest	61		



Comments

Numbers of sockeye passing Port Moller should start declining after this date. Forecasts from the cumulative index catches have the greatest reliability for today and the next 2 days, because past indices have accounted for about 80% of the variation in the Bristol Bay runs, excluding 1997 (the data points on the graphs are close to the prediction line).

July 4 is the half way point in the average Nak/Kvi run (July 3 for Egegik and July 5 for the Nushagak); however, only 39% of the average Naknek/Kvichak catch was made by July 4 over the past 14 years.

Total Bristol Bay catch + escapement through July 4 averaged 37% of the final runs since 1987 (range: 16% in 1994 to 63% in 2000).

The largest single day's escapement of 1.7 million was recorded on this date in 1994.

Through July 5
1987-2000

District Catch	Cumulative through 7/5				River Escapement	Cumulative through 7/5			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	3852	45	2	83	Kvichak	1819	34	14	65
Egegik	5714	57	35	82	Naknek	884	54	29	81
Nushagak	1808	43	12	69	Egegik	772	49	29	74
Togiak	79	21	7	45	Wood	702	52	15	79
Ugashik	509	18	2	71	Igushik	133	34	11	58
All districts	12220	45	21	75	Nushagak	270	56	28	87
					Togiak	7	3	0	15
					Ugashik	11	3	0	27

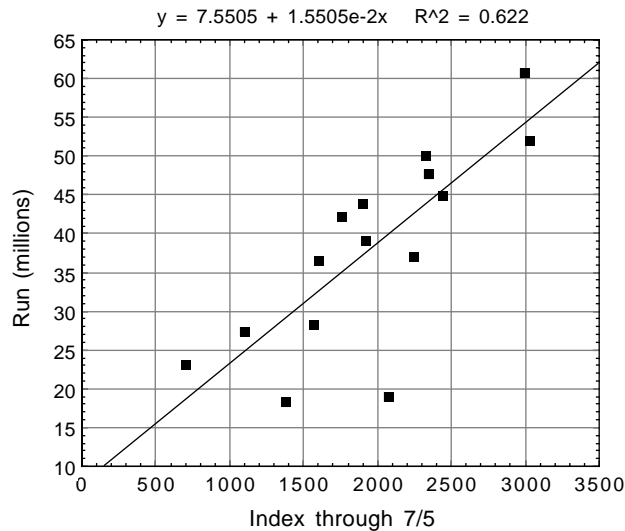
1987-2000 Port Moller sockeye index	Cumulative 7/05 through 7/05	Forecast of total run (millions)
Average	106 2018	In past years the index through 7/5 accounted for 62% of the variation in Bristol Bay runs, 80% excluding 1997.
Lowest	30 707	
Highest	143 3028	

2001 =

(2001 cumulative index)X(.0155) + (7.55)= total run

Bristol Bay runs 1987-2000	
Average	39
Lowest	18
Highest	61

example: if the 2001 index was 3028 (highest for past years) we would forecast the total run by: (3028)X(.0155)+7.55= 54.5, a run of 55 million



Comments

Sockeye passing Port Moller today should be in the fishing districts about the 11th or 12th.

The Ugashik runs are usually well under way by now but few fish are past the tower. Ugashik catches on 7/5 have averaged about 282,000. The Egegik run is still near the peak and catches have averaged 785,000 on this date, whereas Naknek/Kvichak catches averaged 817,000. There have been 10 openings on the 5th in the Nushagak district, and catches on those openings averaged 335,000.

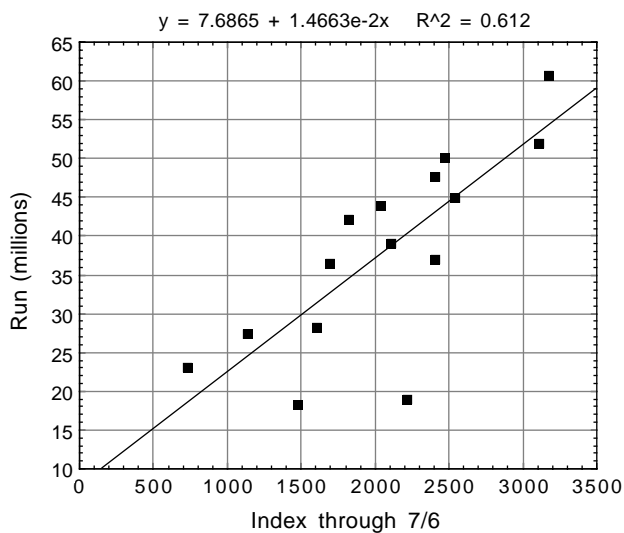
Escapement goals are usually assured by July 5 in Egegik, Naknek and Wood River, although the goals (1 million) may not be reached until another 2 or 3 days.

58% of the Nushagak runs have usually passed through the fishery by July 5.

Through July 6
1987-2000

District Catch	Cumulative through 7/6				River Escapement	Cumulative through 7/6			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	4738	50	2	87	Kvichak	2165	41	20	71
Egegik	6186	62	44	85	Naknek	955	60	40	82
Nushagak	2086	49	13	75	Egegik	889	56	31	78
Togiak	92	23	10	45	Wood	771	57	20	83
Ugashik	651	23	2	72	Igushik	162	42	13	61
					Nushagak	294	61	34	90
					Togiak	8	4	0	16
All districts	13745	50	25	79	Ugashik	24	4	0	29

1987-2000 Port Moller sockeye index	Cumulative 7/06 daily	Cumulative through 7/06	Forecast of total run (millions)
Average	103	2090	In past years the index through 7/6 accounted for 61% of the variation in Bristol Bay runs.
Lowest	23	730	
Highest	182	3177	
2001 =			(2001 cumulative index) X (.015) + (7.7)= total run
Bristol Bay runs 1987-2000			example: if the 2001 index was 2090 (average for past years) we would forecast the total run by: (2090)X(.015)+7.7 = 39.1, a run of 39 million
Average	39		
Lowest	18		
Highest	61		



Comments

Sockeye catches at Port Moller were still relatively high on this date except in 1988 (year of the small run). The cumulative indices show a very close correlation with past runs, except for 1997.

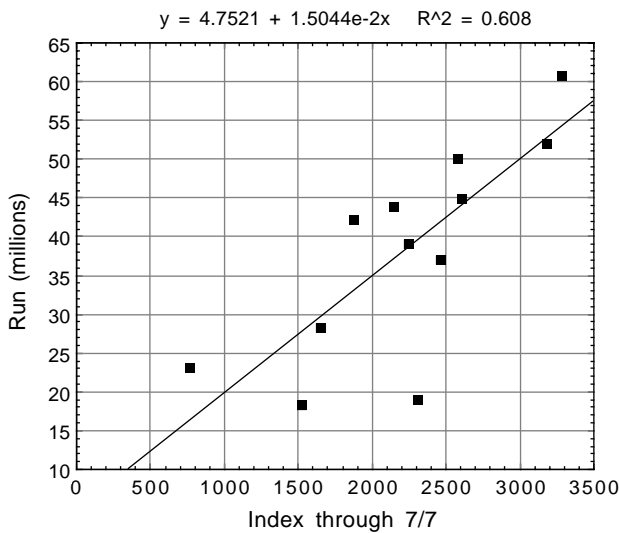
Over half of the Egegik catch has been made by July 6 and half of the total Bristol Bay catch (50%) since 1987. For the years with openings on 7/6, Nushagak catches averaged 360,000; Egegik catches averaged 839,000 and Naknek/Kvichak catches averaged 900,000. For 7 openings on this date in Ugashik the catches averaged 267,000.

On the average, 44% of the Bristol Bay escapement was counted by 7/6 and the total catch + escapement as reported by ADF&G through July 6 averaged 48% the final runs (range: 30% in 1994 to 72% in 1993).

Through July 7
1987-2000

District Catch	Cumulative through 7/7				River Escapement	Cumulative through 7/7			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	5238	55	10	88	Kvichak	2501	46	29	79
Egegik	6693	67	51	87	Naknek	1019	65	46	83
Nushagak	2357	56	39	81	Egegik	1008	63	41	86
Togiak	107	28	10	56	Wood	867	64	22	86
Ugashik	826	28	2	73	Igushik	186	48	17	76
All districts	15268	55	36	82	Nushagak	334	68	38	93
					Togiak	13	7	0	23
					Ugashik	46	6	0	29

1988-89, 1991-2000 Port Moller sockeye index	7/07 daily	Cumulative through 7/07	Forecast of total run (millions)
only 12 years			
Average	72	2220	In the 12 available years the index through 7/7 accounted for 61% of the variation in Bristol Bay runs.
Lowest	20	769	
Highest	142	3283	
2001 =			(2001 cumulative index) x (.015) + (4.8) = (total run)
Bristol Bay runs 1987-2000			example: if the 2001 index was 2220 (average for 12 years) we would forecast the total run by (2220)X(.015) + 4.8 = 38.1 a run of 38 million
Average	39		
Lowest	18		
Highest	61		



Comments

Sockeye salmon passing Port Moller today and tomorrow will probably be in the fishing districts by July 15.

This forecast is based only on 12 years but in another year or two we will make daily forecasts through July 8.

On the average through July 7 (1987-2000), 64% of the Egegik runs, 68% of the Naknek/Kvichak runs, and 63% of the Nushagak runs had passed through the fishing districts, but only 66%, 52% and 56% of the catches were made by July 7. Fishing is usually continuous from now until July 20.

Total Bristol Bay catch + escapement through July 7 as reported by ADF&G averaged 54% of the final runs (range: 38% in 1994 to 77% in 1993).

About half of the Kvichak escapement was reached by this date and most escapement goals are assured by 7/7.

Through July 8
1987-2000

District Catch	Cumulative through 7/8				River Escapement	Cumulative through 7/8			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	5651	59	18	89	Kvichak	2870	53	32	86
Egegik	7093	71	58	91	Naknek	1095	71	48	86
Nushagak	2576	62	39	83	Egegik	1100	69	46	94
Togiak	121	31	10	67	Wood	948	70	24	91
Ugashik	970	33	2	73	Igushik	208	54	18	75
All districts	16472	60	43	86	Nushagak	354	73	41	94
					Togiak	17	9	0	31
					Ugashik	90	9	0	37
1991-98, 2000		Cumulative							
Port Moller	7/08	through							
sockeye index	daily	7/08			Forecast of total run (millions)				
only 9 years									
Average	72	2458							
Lowest	21	1595							
Highest	120	3336			No forecast until more years sampled on this date.				
1999=									
Bristol Bay runs 1991-98, 2000									
Average	39								
Lowest	18								
Highest	61								

Comments

Bristol Bay catch + escapement through 7/8 has averaged 59% of the final run with a range of 46% in 1994 to 82% in 1993.

The second largest single day escapement of 1.56 million was recorded on this date in 1995.

In an average year, 72% of the Naknek/Kvichak, 74% of Egegik, and 70% of the Nushagak runs have passed through the fishing districts by this date.

Cumulative catch+escapement through 7/8 can be used to predict the final run (millions) from: $\text{Run} = 1.21 \times (\text{catch} + \text{escapement}) + 10.1$.

e.g. if cumulative C+E was 10 million through 7/8 we would predict a final run of 22.2 million and if the cumulative C+E was 25 million we would predict a final run of 40.4 million

Through July 9
1987-2000

District Catch	Cumulative through 7/9				River Escapement	Cumulative through 7/9			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	6142	63	17	92	Kvichak	3221	59	39	90
Egegik	7431	75	60	94	Naknek	1158	76	51	87
Nushagak	2836	68	48	88	Egegik	1173	73	52	96
					Wood	1025	76	44	93
Togiak	130	34	10	73	Igushik	229	59	20	80
Ugashik	1279	44	2	79	Nushagak	369	76	48	95
					Togiak	22	12	0	36
					Ugashik	170	15	0	42
All districts	17868	65	51	90					

1991-95, 98 Port Moller sockeye index	7/09 daily	Cumulative through 7/09	Forecast of total run (millions)
only 6 years			
Average	72	2657	
Lowest	43	1693	
Highest	98	3424	No forecast until more years sampled on this date.

1999=

Bristol Bay runs 1991-98	
Average	45
Lowest	18
Highest	61

Comments

Bristol Bay catch + escapement through 7/9 has averaged 64% of the final run with a range of 55% in 1994 to 87% in 1993. The final run can be predicted from : $Run = 1.21(C+E \text{ in } 1,000s) + 7.7$. If C+E is 20 then final run is 31.9 million.

In the average year, 61% of the final Bristol Bay escapement was accumulated by July 9.

Togiak and Ugashik escapement counts were under way by this date in 10 of the past 14 years.

The Ugashik fishery has been open on July 9 in 12 of 14 years and the average catch has been 366,000 with a range of 184,000 in 1997 to 569,000 in 1994.

Through July 10
1987-2000

District Catch	Cumulative through 7/10				River Escapement	Cumulative through 7/10			
	average 1,000s	Percent of season total (%)				average 1,000s	Percent of season total (%)		
		Average	Low	High			Average	Low	High
Naknek/Kvichak	6612	68	25	94	Kvichak	3761	68	46	92
Egegik	7839	79	69	95	Naknek	1207	82	69	90
Nushagak	3068	74	58	91	Egegik	1276	78	62	96
					Wood	1097	81	56	95
Togiak	141	38	13	73	Igushik	237	62	24	82
Ugashik	1393	48	20	81	Nushagak	397	81	56	96
					Togiak	27	13	0	39
					Ugashik	243	19	0	69
All districts	19109	70	57	92					

Port Moller sockeye index	Cumulative		Forecast of total run (millions)
	7/10 daily	through 7/10	
only one year			
Average			
Lowest			
Highest			

No forecast from Port Moller available for this date

2001= ?

Bristol Bay runs 1987-2000

Average	39
Lowest	18
Highest	61

Comments

Bristol Bay catch + escapement through 7/10 has averaged 69% of the final run with a range of 58% in 1996 & to 90% in 1993.

In the average year, 67% of the final Bristol Bay escapement was also accumulated by July 10.

82% of the Egegik and Naknek/Kvichak runs and 80% of the Nushagak runs have passed through the fishing districts by midnight of July 10 with average run timing.

In 11 of the past 14 years the escapement to Egegik through July 10 had exceeded the escapement goal. The same has occurred at Naknek in 7 of the 14 years. The escapement goal to Wood River was assured by July 10 in 13 of the past 14 years and in 7 of the years the escapement exceeded the goal.

The final run (millions) = $1.184 \times (C+E) + 6.2$. If C+E is 20 million, the final run is predicted as 30 million.