

BRISTOL BAY ANNUAL REPORT SERIES

- 1959 -

General

Season catches were poor, but individual fisherman's catches were good due to reduction in size of the fishing fleet. Only eight companies packed fish. Three freezers operated. Due to reduced effort, individual earnings in 1959 were as good or better than in many past years.

Complete closures of the Naknek-Kvichak, Egegik and Ugashik districts and limits on commercial catch in Nushagak were published in the Federal Register on April 28, 1959. These curtailments were imposed in light of an expected small cycle run and an intense high seas fishery. The Federal Register of May 30, contained further amendments, and limited fishing was advocated for all districts. The total red salmon run was estimated at 12,889,000.

Nushagak District

A price dispute resulted in cessation of fishing between June 22 and July 1. By July 1, escapement into Wood River had already reached 800,000. The total run was 4.8 million red salmon. Aerial surveys indicated escapements of: 15,000 for Nushagak-Mulchatna and 140,000 for Snake River. Catch of king salmon reached 38,764 with 8½-inch mesh, and reached a final total of 54,299. A large king escapement was observed.

Togiak District

Effort remained similar to level experienced since 1955. Aerial surveys gave estimate of 180,000 reds in escapement.

Naknek-Kvichak District

Kvichak River was expected to be poor. Good runs to Branch River and Naknek system gave a total district return of 5.4 million.

Egegik and Ugashik Districts

Total run was 1.7 million to Egegik district, which exceeded expectation. There was good utilization of system's spawning areas. Ugashik had a poor run; 643,000 total return.

- 1958 -

General

Very poor pack in 1958. Only nine operators canned fish, while two freezers operated. Salmon runs were poor in all districts except the Nushagak and Togiak. Weather was generally very poor throughout the fishing season, severely limiting stream surveys. Fishing in the Naknek-Kvichak district was very poor; fair in Egegik, Ugashik and Togiak districts; and good in the Nushagak district. Total red salmon run was estimated at 5,769,000. Pink salmon run to Nushagak was very large (60,007 cases) and is exceeded only in 1912 and 1920. 1958 represents first year small mesh gear (4½") was legal. Good king run and catch (87,245) was highest since 1929. During the early part of the king season the catch was running almost 95% large kings (over 15 lbs.), and dropped to about 50% by the first week of red season.

Aerial surveys revealed the following estimated escapements:
Tikchik system, 31,395 reds and 800,000 pinks; Big Creek (Naknek-Kvichak),
1,000 kings; Naknek River, 1,000 pinks; Mother Goose, 18,350 reds, 1,900
kings and 700 chums; and Togiak district, 72,000 reds.

Average earnings for one-man drift boats in the Naknek-Kvichak
district were \$1,591, while set netters averaged \$606.

- 1957 -

General

Fish tickets and registration plates were used for the first time
in 1957. The salmon runs in the Togiak, Nushagak and Ugashik districts
were below average, while the Naknek-Kvichak and Egegik districts had
fair runs. Total value of the 1957 pack was \$18,761,869. Twelve canneries
operated in 1957, three salters and two freezers. The summer weather
was unusually fair, although canneries had difficulties holding fish.
The total red salmon run was estimated at 11,009,000.

Nushagak District

Peak of the red run occurred on July 8-9. Commercial red catch was
491,498. Escapements in the various systems were: Wood River, 288,950;
Tikchik system, 70,000; Nushagak-Mulchatna, 40,000; and Igushik, 67,200.
King salmon run peaked during June 10-20 and escapements were known to
be poor. Chum salmon escapement was fair. Two hundred and twenty drift
nets participated in the king salmon fishery. The average king salmon
take was 258 (\$877). During the red season 217 boats and 110 set nets
operated. The average income earned was \$3,225.

Togiak District

The total red run was about 72,000 (32,000 in escapement). Peak of run occurred on week ending July 6. Chum salmon return was good; 44,000 in catch and 200,000 in escapement (aerial estimate of Togiak River). Forty units of gear operated in the district, compared with 29 the year before. Entire season was on a 5½-day-per-week basis. The average income was \$935. Togiak effort was all drift nets, although effort in earlier years was reported to be mostly set nets.

Naknek-Kvichak District

Peak of red salmon run was on July 8-9; the peak being very sharp due to the fact that there was no body to the run. Total red catch was 4.6 million. Average effort in the Naknek-Kvichak district was 475 drift boats and 56 set nets, while during the peak of the fishery 571 drift boats and 79 set nets were in operation. Drift boat average income was \$7,592, while set nets averaged \$3,387.

Egegik District

Total red salmon run was 1.2 million. Red run peaked during July 8-9 (240,000 in catch), however, catches were maintained at a higher level than the Naknek-Kvichak throughout the entire season. Very dry weather had adverse effect on spawning grounds, and some streams were completely dry. Average drift gear was 119, with 11 set nets, however, at one time 150 drift nets and 14 set nets delivered fish.

Average earnings were: drift nets - \$5,700 and set nets - \$1,258.

Ugashik District

Total red salmon run was 566,000. Run peaked on July 8-9, when 86,000 reds were caught. The counted escapement into Ugashik Lakes

was 214,800, while an additional 6,000 were counted in the Mother Goose system by aerial surveys. Average effort was 61 drift nets and 21 set nets. Average earnings were: drift nets - \$4,430 and set nets - \$1,259.

- 1956 -

General

Boats and fishermen were registered for the first time in 1956. The salmon runs were fair in the Togiak district; red run was poor in the Nushagak, while kings, chums, pinks and cohos were fair; red runs were fair in the Naknek-Kvichak and Egegik districts; all runs were poor in the Ugashik district. Value of 1956 pack was \$21,489,737. Warm weather in July resulted in heavy losses (estimated over 200,000 salmon) before canneries could impose limits. Total red salmon run was estimated at 23,848,000.

Nushagak District

Total red salmon run was 2.3 million, with catch of 1.2 million and escapements of: Wood River, 771,004; Tikchik Lakes, 70,000 (aerial estimate); Igushik, 200,000 (aerial estimate); Snake River, 2,400 (aerial estimate).

The red run peaked during July 12-13. King salmon catch was 56,251 and escapement was known to be poor. King catch was low due to short season caused by price dispute. Pink salmon season was very good, however, only 72,583 were taken by the fishery. Only 5½" mesh was allowed, although permission to use smaller mesh nets was granted. Chum and coho runs were both good. Gear participating in the fishery was 195 drift nets and 139 set nets.

Togiak District

Total red salmon run was 326,900 with catch of 101,933 and escapement of 225,000 (aerial estimate). Amount of gear in the district was 29 drift nets. Average catch was 3,515 reds. Aerial surveys accounted for escapements of 50,000 chum salmon and 12,000 pink salmon, all in the Togiak Lakes and River.

Naknek-Kvichak District

The run started slowly, but began to pick-up around July 9, when canneries were slugged with fish and the following limits were imposed on fishermen: 2,000 to 2,500 per boat during first 15 hours on July 12-13 and 1,350 during last 24 hours. Aerial survey of Kvichak River showed band of fish on each side of river from tidewater to Iliamna Lake. Catch was 6.0 million with escapements as follows: Naknek weir, 1.8 million; Branch, 600,000 (aerial estimate); Kvichak River, 9.4 million. Total run was 17.8 million. King salmon run was fair and chum salmon run average. Gear in the fishery was 323 drift boats and 74 set nets.

Egegik District

Total run was 2.3 million, with 1.2 million to catch and 1.1 million to escapement. Limits of 2,000 reds were placed on fishermen for 19 hours on July 12. Operating gear numbered 83 drift nets and 30 set nets. Run peaked on July 12-13.

Ugashik District

Total run was 772,000 with 342,000 in catch and remainder in escapement. An additional 5,000 red salmon were aerial counted in the Mother Goose system. Gear operated was 45 drift nets and 27 set nets. Run peaked on July 12-13.

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From Memo BCF Unesa 8/8/60

See Part I

PART I: Fishing Days in Season

District	1958	1959
Ugashik	9.125	12.750
Egegik	9.125	15.500
hatchek-Kachek	7.625	14.875
Nushagak	11.625	15.250
Total	37.500	58.375
(A) Average	9.375	14.594

PART II: POWERBOAT DRIFT GILLNET FISHERY

ITEM	1958	1959
(B) Catch — nos of fish	2,765,251	4,065,995
(C) Effort — nos of fathom-days	901,165	951,465
(D) Effort — nos of fathoms [Line C ÷ Line A]	96,124	65,196
(E) Catch per fathom-day [B ÷ C]	3.0685	4.2734
(F) Catch per fathom [B ÷ D]	28.7675	62.3657

PART III: SET GILLNET FISHERY

(G) Catch — nos of fish	220,415	542,124
(H) Effort in p'boat drift gillnet fathom-day equivalents [G ÷ E]	71,832	126,860
(I) Effort in p'boat drift gillnet fathom equivalents [G ÷ F]	7,662	8,693
(J) Effort — no. of set gillnets fathom-days	92,265	122,550
(K) Catch per set gillnet fathom-day	2,3889	4.4237
(L) Relative efficiency: p'boat drift gillnet fathom-day to set gillnet fathom-day [E ÷ K]	1.2845	0.9660

PART IV : POWERBOATS & SET GILLNETS COMBINED

	1958	1959
(M) Total Catch [B + G]	2,985,666	4,608,119
(N) Total Effort in powerboat drift gillnet fathom-day equivalents [C + H]	972,997	1,078,325
(O) Total Effort in sailboat drift gillnet fathom-day equivalents [N × 1.5048] ↓	1,464,166	1,622,663
(P) Catch per thousand sailboat drift gillnet fathom-day equivalents [M ÷ O]	2039	2839

✓ Conversion factor of 1.5048 is based on the relative efficiency of powerboat drift gillnets to sailboat drift gillnets observed in 1953. The relative efficiency was determined from the 1953 catch-per-unit of the two types of gear.

Used in Oct 1960 report on
1958 & 1959 statistics

EP

PART I: ESTIMATES OF EFFORT — PROCEDURE OR PREVIOUS YEARS

1958

DISTRICT	DRIFT		GILLNETS	
	A No. of 2-man p'boat days	B Days in season	C = A/B No. of 2-man p'boats	D = C(150) No. 2-man p'boat fathoms
M-K	2183.75	7.625	286.393	42959
E	900.45	9.125	98.679	14802
U	534.47	9.125	58.572	8786
N	<u>2389.10</u>	<u>11.625</u>	<u>205.514</u>	<u>30827</u>
	6007.77		649.158	97374

1959

M-K	2057.50	14.875	138.319	20748
E	826.60	15.500	53.329	7999
U	542.80	12.750	42.592	6386
N	<u>2916.20</u>	<u>15.250</u>	<u>191.226</u>	<u>28684</u>
	6343.10		425.446	63817

P'BOAT D G NETS

	1958	1959
A. Catch - nos of fish	2765257	4065995
B. Effort - no. of fathoms	97374	63817
C. Catch per fathom	283982	637134

SET GILLNETS

D. Catch - nos of fish	220415	542124
E. Effort - in p'boat drift gillnet fathom equivalents [D ÷ C]	7762	8509

BOTH GEAR TYPES

F. Total catch [A + D]	2985666 ✓	4608119 ✓
G. total effort - p'boat drift gillnet fathom equivalents [B + E]	105136	72326
H. total effort - in sailboat drift gillnet fathom equivalents [G × 1.5048]	158209	108836
I. Ave temp in season	9.375	14.594
J. total effort - in thousands of sailboat drift gillnet fathom day equivalents [H × I]	1483 ✓	1588 ✓
K. Catch per thousand sailboat drift gillnet fathom day equivalents [F ÷ J]	<u>2013</u> ✓	<u>2902</u> ✓

Used for 1960 report

Part II : Conversion factors for set gillnets

	1958	1959
(A) Catch - p'boat DGN	2765251	4065995
(B) Effort - " " fishing days	901165	951465
(C) Catch per p'boat DGN f'day	3.0685	4.2734
(D) Catch - set GN	220415	542124
(E) Effort - " " fishing days	92265	122550
(F) Catch per set GN f'day	2.3889	4.4237
(G) Ratio $F \div C$	<u>0.778524</u>	<u>1.035171</u>
(H) Adjusted set GN effort to p'boat DGN f'day (G x E)	71831	126860

The average conversion factor for set gillnets was approximately 0.78 in 1958 and 1.04 in 1959 — based on the catch per unit effort of the two types of gear — these factors are considerably greater than the 0.25 used for the NK, E and U and 0.40 used for the Nushugare. (See memo Aug 8 '60 from GCF Bureau)

Part III : Comparison of estimates of effort

	1958	1959	Ratio $\frac{59}{58}$
Aug 8 '60 total Effort - 2-men p'boat day	6645.04	7137.05	1.074
Part III " " - subtotal DGN f'day equiv (100's)	1464	1623	1.109
Part II " " " " " " " "	1483	1588	1.071

PART VIII: Calculations for 5-year moving averages (using estimates of effort and catch per unit obtained by procedure of previous years).

Year	Annual Statistics		
	C	f	C/f
54	4.653	2651	1755
55	4.549	2588	1758
56	8.881	2001	4438
57	6.276	3010	2085
58	2.986	1483	2013
59	4.608	1588	2902

5-year totals

55-56-57-58	56	27.345	11733	12049	✓
56-57-58-59	57	27.300	10670	12386	✓
57-58-59-59	58	27.359	9670	13530	
58-59-59-59	59	23.086	9257	11994	

} Preliminary
" "

5-year moving averages

56	5.469	2347	2410	✓
57	5.460	2134	2477	✓
58	5.472	1934	2706	
59	4.617	1851	2399	

} Preliminary

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TO : Laboratory Director, BCF Biological Laboratory
Seattle, Washington

DATE: August 8, 1960

FROM : Acting Regional Director, BCF, Juneau

SUBJECT: Abstention Items

In accordance with Mr. Fredin's telephone request of August 1, the following parts of the Lists of Abstention Items (your memorandum of April 27) are forwarded:

From List 1a

Part IV A. For the Bristol Bay red salmon stock (all fishing districts combined), 1958 and 1959:

1. For the powerboat drift gill net fishery:

a. Catch in numbers of fish

1958 - 2,765,251 reds

1959 - 4,065,995 reds

b. Numbers of fathoms of gear fished.

1958 - 901,165 fathom days

1959 - 951,465 fathom days

2. For the set gill net fishery:

a. Catch in numbers of fish

1958 - 220,415 reds

1959 - 542,124 reds

b. Number of fathoms of gear fished.

1958 - 92,265 fathom days

1959 - 122,550 fathom days

3. For each fishing district:

a. The number of days of fishing in the season.

(1) Ugashik

1958 - 9 days 3 hours

1959 - 12 days 18 hours

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(2) Egegik

1958 - 9 days 3 hours
1959 - 15 days 12 hours

(3) Naknek - Kvichak

1958 - 7 days 15 hours
1959 - 14 days 21 hours

(4) Nushagak

1958 - 11 days 15 hours
1959 - 15 days 6 hours

From List 1b

Part IB. For the Bristol Bay red salmon:

1. For each district

- a. The age composition (i. e., proportions of 4, 5, 6, and 7-year old fish) of the total run in 1956, 1957, 1958, and 1959

District		Age			
		4	5	6	7
Naknek - Kvichak	1956	45.9	42.0	12.4	0.2
	1957	0.8	82.7	16.8	0.1
	1958	10.4	42.9	46.4	0.2
	1959	(1)	(1)	(1)	(1)
Egegik	1956	16.8	58.2	23.8	1.2
	1957	1.1	34.2	63.4	1.1
Nushagak	1958	1.8	58.6	38.6	0.8
	1959	(1)	(1)	(1)	(1)

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District		Age			
		4	5	6	7
Ugashik	1956	60.2	30.1	9.4	0.3
	1957	23.2	66.2	9.8	0.0
	1958	4.5	84.6	10.9	0.0
	1959	4.1 (2)	59.7	33.3	0.1 (2)
Nushagak	1956	26.0	67.0	7.0	0.0
	1957	(3)	(3)	(3)	(3)
	1958	(3)	(3)	(3)	(3)
	1959	(3)	(3)	(3)	(3)

- (1) 1959 age analysis not complete.
- (2) Preliminary figures.
- (3) Data collected by Fisheries Research Institute, University of Washington, and not yet available in Juneau.

b. The total run, catch, and escapement (all figures in millions of fish) for 1959

District	Catch	Escapement	Total Run
Naknek - Kvichak	1,689,425	3,732,262 (1)	5,421,687 4,596,256
Egegik	662,391	1,072,459	1,734,850 ✓
Ugashik	423,414	219,228	642,642
Nushagak	1,719,687	3,103,408 (2)	4,823,095 4,823,095
	4,494,917	-	

- (1) Naknek escapement - 2,232,644
Kvichak escapement - 674,187 and
Branch River escapement - 825,431
- (2) Wood River escapement - 2,210,763; Igushik escapement - 643,808; Nuyukuk escapement 48,837; and Snake River escapement (estimated) - 200,000.

- c. The total return from the 1952 escapement (i. e., through the 7-year old fish) and the return to date from the 1953 escapement (i. e., through the 6-year old fish).

Brood Year	Returned at age (1,000's of fish)			
	4	5	6	7
1952	(56)	(57)	(58)	(59)
Naknek - Kvichak	7,897	6,868	850	(1)
Egegik	385	412	289	(1)
Ugashik	461	375	80	(1)
Nushagak	644	(2)	(2)	(2)
1953	(57)	(58)	(59)	(60)
Naknek - Kvichak	66	785	(1)	(1)
Egegik	13	439	(1)	(1)
Ugashik	131	622	(1)	(1)
Nushagak	(2)	(2)	(2)	(2)

- (1) Age analysis not complete for 1959 or 1960
 (2) FRI data

- d. The amount of fishing effort (expressed in 2-man power boat days) in 1958 and 1959.

District	Fishing effort (1)			
	1958		1959	
	drift	set	drift	set
Naknek - Kvichak	2,183.75	90.85	2,057.50	194.60
Egegik	900.45	21.07	826.60	33.78
Ugashik	534.47	56.25	542.80	82.37
Nushagak	2,389.10	469.10	2,916.20	483.20
Total	6,007.77	637.27	6,343.10	793.95

- (1) Conversion factors: set net = 0.25 two-man powerboat in Naknek - Kvichak, Egegik and Ugashik; set net = 0.40 two-man powerboat in Nushagak.

Laboratory Director, Seattle

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August 8, 1960

Work is in progress on the remaining parts of Lists 1a and 1b and we anticipate completion of these in the near future. The remaining lists of Abstention Items are under review and information on their status will be forthcoming.

Francis W. Stokes

Francis W. Stokes
Acting Regional Director

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