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ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
BRISTOL BAY AREA

Annual Management Report

-1969-

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PREFACE

Data in the 1969 Annual Management Report supercedes assorted collected information previously reported on. All preliminary data is so indicated by appropriate footnotes.

TABLE OF CONTENTS

	<u>Pages</u>
Introduction-----	1
District Summaries:	
Naknek-Kvichak-----	4
Egegik -----	6
Ugashik-----	8
Nushagak-----	10
Togiak-----	15
Other Fisheries:	
Herring Fishery-----	17
Subsistence Fishery-----	17
Fishery By-Products-----	17
Miscellaneous-----	18
Field Programs-----	18
Tables:	
Red Salmon Catch & Escapement Summary, Table 1-----	19
Red Salmon Forecast & Escapement Goals, Table 2-----	20
Pre-Season Gear Registration, Table 3-----	21
Emergency Order Fishing Periods, Table 4-----	21b
District Catch by Species & Period, Tables 5 - 9-----	22
Catch Summary by Species & District, Table 10-----	27
Catch by Type of Gear, Table 11-----	28
Case Pack and Fresh-frozen and Cured Production by Species & Company, Table 12-----	29
Salmon Egg Production & Value by Species & Company Table 13-----	31
Herring Catch & Production, Table 14-----	32
Fishery Operators by District, Table 15-----	33

BRISTOL BAY ANNUAL MANAGEMENT REPORT

-1969-

INTRODUCTION

As Final compilation of the commercial harvest and escapement data is completed the 1969 Bristol Bay red salmon season begins to emerge as an unusual season for this world-famous red salmon fishery. In view of the fact that earlier reports based on incomplete information indicated that the 1969 return would probably fall significantly below the fore-casted return, it is appropriate to review the 1969 season now that complete information is available. Contrary to initial reports of another disaster season for Bristol Bay, a commercial catch approaching 500,000 cases of reds was eventually harvested from an inshore return of 19,043,000, a return which fell only 2,231,000 fish short of the 21,274,000 pre-season forecast (Tables 1 & 2).

Several factors combined to distinguish the 1969 season from recent seasons in Bristol Bay. First, and most significant, the total inshore return of approximately 19,000,000 reds represents a record return for non-peak years since 1955 when reliable inshore return data was first available. In comparison, 1961 and 1966 experienced inshore returns of 18,116,000 and 17,553,000 respectively, while the next largest non-peak year was 1959 when 12,889,000 reds returned to Bristol Bay. Two independent pre-season forecasts of the 1969 inshore return of red salmon provided by the Alaska Department of Fish and Game (ADF&G) and the Fisheries Research Institute of the University of Washington (FRI) indicated returns of 21,274,000 and 16,200,000 red salmon respectively. The ADF&G forecast for individual river systems was based primarily on the size of parent spawning populations, past age compositions and recent returns, while the FRI forecast was developed from the annual high seas sampling of immature reds south of the Aleutian Islands. In view of the variability existing in factors affecting salmon survival, both forecasts compared favorably with the actual return of 19,043,000. The primary significance of this large return is the opportunity it presented to achieve a large non-peak year escapement for the major Kvichak River spawning grounds.

A second feature of particular note in the 1969 Bristol Bay season was the strike for higher salmon prices by independent fishermen. This strike climaxed on July 1 when striking fishermen formed a vessel blockade across the mouth of the Naknek River to prevent company fishermen, who had already negotiated a price settlement, from leaving the river and entering the Naknek-Kvichak fishing district to participate in a 12-hour fishing period. An emergency order by ADF&G provided for an additional 12-hour fishing period on July 1 and 2 in the Naknek-Kvichak district was then rescinded by the Governor's Task Force in an attempt to prevent threatened, serious violence and to expedite settlement of the price dispute to insure harvest of this valuable resource. After 76 hours of substantially curtailed fishing effort as a result of the crippling strike, fishing was resumed in the Naknek-Kvichak district at 1:00 a.m. on July 3. Large early escapements were attained in several of the river systems as a result of the reduction in fishing effort due to the labor dispute.

A third, unusual characteristic of the 1969 season was the timing and duration of the red run. Although significant numbers of salmon appeared in the fishing districts earlier than normal - a pattern similar to those of the past two years - the 1969 run was of a much longer duration, with a resulting depressed peak period strength. Depressed catches during the normal peak periods led to the belief that the 1969 run would fall significantly short of expectations. These depressed catches were accentuated in the Naknek-Kvichak district by the fact that the processor's preliminary catch reports for the July 3 fishing period under-estimated the actual commercial catch of 1,591,000 by approximately 50% - an error of approximately 800,000 fish which was not detected until after the season was over.

Evaluation of the strength of the run was also complicated by the difficulty encountered in interpreting catch per unit effort data emanating from sharply reduced fishing efforts in several of the major fishing districts. The late season strength of the run was reflected in the July 7-13 catch of 1,697,000 reds in the Naknek-Kvichak district (Table 5).

Excellent escapements were achieved for almost all systems of Bristol Bay in 1969, thereby providing the potential for good returns 4 and 5 years in the future. The highlight of the season was once again provided by the Kvichak River where 8,394,000 reds were tallied at the counting tower to provide this immensely productive red salmon system with the first large non-peak year escapement in the last two decades. Recent non-peak year returns have not been of sufficient magnitude to provide large escapements - the previous largest non-peak year escapement being 3,775,000 in 1966. The significance of the large 1969 Kvichak escapement is the opportunity it provides ADF&G to achieve its goal of obtaining a pattern of 2 or 3 good consecutive escapements in the Kvichak system in an attempt to revive the earlier historical pattern of 2 or 3 good years for each 4 or 5 year cycle as opposed to the recent, less desirable pattern of only one good year in each cycle. Now, unless extenuating circumstances occur, an excellent peak year escapement is guaranteed in 1970 and a second good non-peak year escapement is possible in 1971. In addition to the Kvichak River, desired escapement goals were achieved or surpassed in the Naknek, Egegik, Wood, Igushik and Togiak systems. Actual escapements fell short of the desired ranges in the Ugashik and Nuyakuk rivers.

A further bright spot in the 1969 season was provided by the close agreement between the pre-season forecast and the final return. In comparison with the individual river system forecasts which totaled 21,274,000 reds the final inshore return of 19,043,000 represents an overall forecast error of only 10%. Furthermore, with the exception of 1 or 2 systems, the individual river system forecasts, which are required for refined management of the runs returning to the individual districts, reflected acceptable levels of precision. The failure of all but two of the rivers to attain expected levels of return resulted in a over-forecast for the total Bristol Bay run. This discrepancy between forecast and return may have been due to several factors. Prior to arrival at the inshore fisheries, Bristol Bay reds were intercepted by three different fishing fleets in 1969. Of major concern was the new operation of a South Korean fishing fleet south of Bristol Bay in the Port Moller area, an operation which is estimated to have harvested 300,000-700,000 Bristol Bay reds. South Korea is not a member of the International North Pacific Fisheries Treaty which controls Japanese harvest of Bristol Bay reds on the high seas. The unexpected emergence of a second foreign fishery intent on intercepting Bristol Bay reds accentuates the need for more effective enforcement of the abstention principles in the existing treaty and the expansion of fishing treaties to include other foreign nations. Although exact Japanese harvest data is not presently available, on the basis of past fishing success and the magnitude and age structure of the 1969 inshore return an estimated 2,031,000 Bristol Bay reds were harvested by the Japanese fleet operating west of the 175° west longitude abstention line. In addition, a highly successful Alaska fishery in the False Pass area harvested approximately 780,000 reds, the majority of which were of Bristol Bay origin. Although the ADF&G inshore river system forecast was adjusted for an anticipated Japanese harvest of several million fish and an average False Pass catch, the above-average False Pass catch in conjunction with the unexpected South Korean harvest could account for nearly 1,000,000 reds and the subsequent failure of the majority of the Bristol Bay systems to achieve forecasted levels of return.

The 1969 red salmon harvest of approximately 440,000 cases represents a two-fold increase over the 1968 pack, in spite of the fact that the commercial catch of 6,622,000 was significantly depressed by the labor dispute which seriously hampered fishing efforts in several districts prior to July 3.

In the Igushik section of the Nushagak district, only several set nets were fishing the traditionally early Igushik return during the period when the major portion of the run passed through the fishery. Had normal fishing effort existed during the 96 hours of fishing time allowed prior to July 3, management biologists conservatively estimate that an additional 200,000 reds would have been harvested from the Igushik run alone. Disrupted fishing effort in the Naknek-Kvichak district accounted for a reduction in the commercial catch of at least 1,000,000 reds. In total, a conservative estimate of 1,500,000 fish, or equivalently 100,000 cases, would probably have been added to the commercial catch in the absence of the labor dispute.

An added bonus for the Bristol Bay fisherman in 1969 was provided by the second highest king salmon harvest on record since 1951. Record catches in the Togiak and Naknek/Kvichak districts and an above-average harvest in the Nushagak district combined to yield a total harvest of 125,000 king salmon, second only to the 140,000 catch in 1964.

The 1969 salmon case pack value totaled approximately \$19,857,000 for all species, based on first wholesale value, while other salmon production (fresh, frozen and cured) was valued at \$1,251,000. When salmon roe value (\$988,000) and herring production value (\$15,000) is totaled with salmon, the total first wholesale value of all Bristol Bay fishery resources in 1969 was \$22,111,000.

The Alaska Department of Fish and Game views the 1969 Bristol Bay season as highly successful and with the hope that it will represent the beginning of a period of increased returns to the participants in this fishery. The anticipated returns for the 1970 and 1971 seasons are already encouraging.

NAKNEK-KVICHAK DISTRICT

Boundaries of this district remained the same as in 1968. Fishing periods for the Naknek and Kvichak sections coincided until July 3, when achievement of the Naknek River escapement goal was assured. The Naknek section was then opened to continuous fishing while fishing in the Kvichak section continued to be regulated by emergency order. The Kvichak section was opened to continuous fishing July 8 (Table 4).

Pre-season gear registration for this district was 1,252 units, of which 855 were drift nets and 397 set nets (Table 3). This was 286 units above 1968. Non-residents and residents comprised 44% and 56%, respectively, of the total gear registration. The highest number of gear units fishing in this district was 1,172 (94% of the registered total) during the 12-hour period July 3. Only 29 gear units were fishing the preceding period, July 1, during the strike.

The inshore red salmon forecast for the Naknek-Kvichak district was 15,937,000, divided to three river systems as follows: Kvichak - 12,780,000; Branch - 416,000; and Naknek 2,741,000 (Table 2). The total actual run for the Naknek-Kvichak district was 14,563,000, only 9% below forecast.

Seven canneries operated a combined total of 18 one-pound lines, 5 half-pound lines and 1 quarter-pound line in this district in 1969 (Table 15). One operator processed for the fresh salmon market and one operator was salting and curing salmon. Two operators were freezing salmon and three were processing salmon roe (Table 15).

Management

Allowable fishing time for this district during the emergency order period, June 23 to July 19, was 412 hours (Table 4). The cumulative red salmon catch prior to June 23 was 1,000 fish (Table 5).

The Naknek-and Kvichak sections were simultaneously opened to fishing for 24-hour periods June 23, 25 and 27 and for a 12-hour period June 29 (Table 4). Red salmon catches during these periods were 8,000; 49,000; 331,000 and 449,000, respectively, with the cumulative catch through June 30 being 838,000. The Kvichak River cumulative escapement count from the tower on June 30 was 55,000 (6,000,000 escapement goal) while aerial surveys indicated only a moderate showing of fish in the river. The cumulative count from the Naknek tower on the same date was 419,000 or nearly half the 1,000,000 escapement goal.

A 12-hour fishing period for both sections was announced for July 1, 11 a.m. to 11 p.m., but a blockade formed by striking fishermen across the mouth of the Naknek River prevented fishing by most non-striking fishermen. The catch for this period was only 21,000 (Table 5). Inside test boat catch indices on July 1 were the highest they had been during the season and an estimated 1,553,000 red salmon passed the test fishing site that day. Aerial surveys indicated a strong showing of fish in the lower river. The July 1 escapement count at the Naknek tower was 216,000, bringing the cumulative count to 635,000, nearly two-thirds of the escapement goal for the Naknek River.

An emergency order was issued for another 12-hour period, 11 p.m. July 1, to 11 a.m. July 2 (Table 4). This order, however, was rescinded by the Governor's Task Force in hopes of averting threatened violence between striking and non-striking fishermen. The strike was settled late July 2 and the Department immediately announced another 12-hour opening from 1 a.m. to 1 p.m., July 3 (Table 4). This period's red catch was 1,585,000 (Table 5). It was apparent by early July 3 that the Naknek River escapement goal would be achieved, and another emergency order was announced to leave the Naknek section open to continuous fishing while the Kvichak section closed at the end of the July 3 period (Table 4).

Inside test fishing indices for the Kvichak River reached a peak July 2, dropped sharply July 3, and rose again July 4. Escapements past the test fishing site were estimated at 1,713,000, 887,000 and 1,258,000 on those dates, respectively. Cumulative escapement past this site through July 4 was estimated to be 7,400,000. However, the cumulative tower count through July 4 was only 1,189,000, just over one-sixth the escapement goal. Although aerial surveys on July 2 and 4 indicated strong numbers of fish in the river, no survey estimates exceeded 1,000,000 and no one thought anywhere near 6,000,000 fish (difference between test boat indices and tower counts) were in the river. The test boat indices were thought to be in error. Foul weather prevented aerial surveys July 3.

The Kvichak section was reopened for 12 hours July 5 (Table 4). The period red catch, 386,000 was a substantial drop from the previous period's catch of 1,585,000 (Table 5). Inside test fishing indices produced an estimated escapement of 326,000 for that date, bringing the cumulative estimated escapement past Nakeen to 7,726,000. Aerial survey conditions were poor again July 5 and once more the numbers of fish estimated to have passed the test fishing site could not be accounted for in the river. The cumulative tower count through July 5 was 1,752,000.

Test fishing catches dropped rapidly July 5 and 6, but aerial survey estimates increased to as high as 4 million, and over 1,290,000 fish passed the towers these days.

Another 12-hour period, 5 p.m. July 7, to 5 a.m., July 8, was announced for the Kvichak section (Table 4). Over 847,000 fish passed the Kvichak tower July 7, as tower counts continued to increase by over 100,000 daily for the fourth consecutive day. Cumulative escapement past the tower through June 7 was 3,326,000. Aerial surveys revealed a continuing strong show of fish in the river. Achievement of the Kvichak River escapement goal seemed virtually assured and the Kvichak section was opened to continuous fishing 5 a.m., July 8 (Table 4). Nearly 1,000,000 fish passed the Kvichak tower July 8, bringing the cumulative escapement to over 4,000,000. Cumulative escapement past the tower topped the 6,000,000 mark July 11, and reached 8,394,000 as counting terminated July 31. Catches remained surprisingly steady after a sharp drop from 1,585,000 during the 12-hour period July 3, to 386,000 for the 12-hour period July 5 (Table 5). Approximately 1,697,000 red salmon were caught from July 7 through July 13 (daily average 242,000). The season's red salmon catch for the Naknek-Kvichak district was 4,655,000 (Table 5)

Catch

The Naknek-Kvichak district commercial catch for all salmon species was 4,717,000, or 66% of the total Bristol Bay catch for 1969 (Table 10). This catch is 4% below the 18-year average (1951-68) of 4,889,000 for this district.

The district red salmon catch, 4,655,000 was 65% of the total Bristol Bay harvest of all species, and 2% below the average red salmon catch for the past 18 years. The red salmon catch accounted for 99% of the total district harvest (Table 5). Preliminary age composition of the district red salmon catch was 58% 4-year fish from the 1965 parent year escapement, 35% 5-year fish from 1964, 7% 6-year fish from 1963. Preliminary sex ratio of the catch was 48% males and 52% females.

The king salmon catch for this district, 19,000, was the largest in the past 19 years and nearly three times as large as the 1968 catch of 6,400.

The 43,000 chum salmon catch was identical to the chum catch in 1968, but well below the 18-year average of 116,000. Chum catches have been comparably low since 1965.

Escapement

Counts were made from towers on the Kvichak, Naknek and Branch Rivers to determine red salmon escapement to these systems. Test fishing was conducted at the mouth of the Kvichak River to provide indices of daily escapements and aerial surveys of the Kvichak River provided additional estimates.

The total red salmon escapement to these rivers was 9,908,000 or 68% of the total run to the Naknek-Kvichak district (Table 2). Escapement by river system and percentage of total district escapement were as follows: Kvichak River - 8,394,000 (85%); Naknek River - 1,331,000 (13%) and Branch River - 182,000 (2%). The total district escapement in 1969 was 59% higher than the 14-year (1955-1968) average of 6,238,000.

The major preliminary age classes of the escapements to these rivers were: Kvichak - 84% 4-year fish from 1965, and 15% 5-year fish from 1964; Naknek - 27% 4-year fish from 1965, 59% 5-year fish from 1964, and 13% 6-year fish from 1963; and Branch - 36% 4-year fish from 1965, and 60% 5-year fish from 1964. The preliminary escapement sex ratio for the Kvichak River was 52% males and 48% females; for the Naknek River 47% males and 53% females; and for the Branch River 45% males and 55% females.

Egegik District

Boundaries of this fishing district were the same as in 1968. The emergency order period extended from June 23 to July 19.

Pre-season gear registration was 484 units, comprised of 280 drift nets and 204 set nets (Table 3). The same total number of units were registered for this district in 1968, the only difference being that five less drift net units and five more set net units constituted the 1969 total. Non-residents and residents comprised 45% and 55%, respectively of the total district registration. The highest number of gear units fishing in this district was 334 (69% of the registered total) during the 12-hour period July 1 (Table 6). This is in contrast to the July 1 period in the Naknek-Kvichak district where the strike reduced fishing effort to practically nothing.

The inshore red salmon forecast for this district was 1,972,000 (Table 2). The total actual run was 1,905,000, only 3% below the forecast (Table 1).

Only one cannery (1 half-pound line) and one vessel (1 one-pound line) canned salmon in the Egegik district in 1969 (Table 15). Two operators processed for the fresh salmon market, four were salting salmon and one was processing salmon roe (Table 15).

Management

During the emergency order period, June 23 to July 19, 389 hours fishing time was allowed (Table 4). The cumulative red salmon catch prior to June 23 was 9,000. Red catches during 24-hour periods June 23, 25 and 27 were 29,000; 50,000; and 41,000 respectively, bringing the cumulative catch through June 28 to 129,000 (Table 6). No escapement counts had been made at the tower to this date and only sparse numbers of salmon were observed in the Egegik Lagoon during aerial surveys. Catches appeared to be progressing well in advance of escapement.

A 12-hour period was allowed June 29, during which 218,000 red salmon were caught (Table 6). This brought the cumulative catch to 347,000, while escapement continued to lag.

Another 12-hour period, July 1, produced a catch of 256,000, raising the cumulative catch to 603,000 (Table 6). Cumulative escapement past the tower was 1,500 through July 1. Lagoon survey estimates ranged from 84,000 to 150,000 on June 30 and July 1, while approximately the same number of fish were estimated to be in the river between the lagoon and the fishing district. Estimated cumulative escapement from inside test fishing catches varied from 93,000 to 249,000 using two calculation methods. Escapement through July 1 was, at best, about half the cumulative catch, and the district was left closed to achieve a significant escapement increase.

No build-up of fish was observed in the lagoon through July 4. Poor weather conditions July 5, permitted only partial surveys of the lagoon, but good fish activity was noted in the muddy river water below the lagoon. Cumulative escapement past the tower was 125,000 through July 5. Cumulative escapement past the test fishing site through July 5 was estimated to be 184,000 and 447,000 by two methods of calculation.

Weather conditions again hampered surveys during morning, July 6. By afternoon, however, weather improved and another aerial survey was made. A significant build-up of fish had occurred, as 350,000 were estimated to be in the river and lagoon combined. In addition, 78,000 red salmon passed the tower July 6, bringing the cumulative escapement at the tower to 203,000.

A 12-hour period was announced for July 7, and as it became apparent that the 700,000 escapement goal would be achieved, another announcement was made to permit continuous fishing to the end of the emergency order period, July 19 (Table 4).

Catch

The Egegik district commercial catch for all species was 906,000 or 13% of the total Bristol Bay catch for 1969 (Table 10). This catch is 26% below the 18-year average (1951-68) of 1,231,000 for this district.

The red salmon catch, 889,000 was 13% of the total Bristol Bay red salmon catch for 1969 and 26% below the 18-year average (1951-68) of 1,199,000 for this district. The red salmon catch accounted for 98% of the total district harvest (Table 6).

Preliminary age composition of the district red salmon catch was 7% 4-year fish from the 1965 parent year escapement, 70% 5-year fish from 1964, 22% 6-year fish from 1963 and 1% 7-year fish from 1962. Preliminary sex ratio of the catch was 54% males and 46% females.

Escapement

Escapement counts were again made from towers on the Egegik River between the lagoon and Lake Becharof. Inside test fishing and aerial surveys of the lagoon supplemented escapement estimates.

Total red salmon escapement for this district was 1,016,000 in 1969, 27% above the average for the past 18 years (Table 1).

The major preliminary age classes of the escapement were: 5% 4-year fish from 1965, 75% 5-year fish from 1964, 19% 6-year fish from 1963, and 1% 7-year fish from 1962. The preliminary escapement sex ratio for the Egegik district was 60% females and 40% males.

UGASHIK DISTRICT

The Ugashik district fishing boundaries have remained unchanged since 1967, at which time the outside district boundaries were enlarged.

Initial gear registration was 147 units, 74 drift and 73 set net (Table 3). This district is primarily a resident fishery. Residents held 105 (71%) of the issued gear licenses. Since this district was expected to have a low inshore return and only one operator, much of the effort transferred to other districts. During the fishery peak there were 50 boats and 18 set nets participating in the fishery (Table 7). Eleven of these set nets were located at Ugashik Village.

The predicted Ugashik district inshore red salmon return was 712,000 (Table 2). Catch and escapement allocations were 312,000 and 400,000 respectively (Table 2). However, as the season progressed, it was apparent that the inshore return would fall short. The total inshore return was 330,000 or 46% of the total inshore forecast (Table 1).

Management

There were 192 hours of fishing time allowed during the emergency order period in the Ugashik district (Table 4). This was divided into seven 24-hour periods between June 23 and July 6 and two 12-hour periods between July 8 and 12. Skiff and set nets provided most of the early season fishing effort, with most large vessels transferring to other districts.

The commercial catch through June 30, was less than 9,000 red salmon during 96 hours fishing time (Table 7). Due to the strike and processing difficulties no fish were taken during the 24-hour period, June 29-30.

Upon request by fishermen, the 48-hour waiting period for transfer to the Ugashik district was waived through a regulation change July 1. The request was granted because this district had little fishing effort and a good predicted inshore return. After the waiver, processors announced they would provide scow service in this district, and fishing effort increased.

During 24-hour fishing periods July 1, 3 and 5, red catches were 41,000, 45,000 and 43,000, respectively (Table 7). After these periods, the district remained closed for 52 hours. A 12-hour period, July 8, produced a 17,000 catch. This catch indicated the run had peaked earlier. Cumulative escapement through July 8 was only 2,000. The fishery remained closed for 72 hours before a 12-hour period was allowed July 12. This period produced a catch of 11,000 red salmon. To this date, neither tower counts nor aerial surveys indicated any significant escapement build-up. Fishing remained closed until five-day-a-week fishing commenced on July 21.

The 1969 total inshore Ugashik district red salmon run consisted of 26% 4-yearfish from the 1965 parent year escapement, 69% 5-year fish from 1964 and 5% 6-year fish from 1963.

Catch

The 183,000 commercial catch for all species in the Ugashik district is one of the three lowest recorded during the past 19 years. This catch represents 3% of the total Bristol Bay catch and was 61% below the 18-year (1951-68) average catch of 467,000.

The 170,000 red salmon catch was the third lowest since 1951. This catch was 93% of the total district catch for all species and 61% below the 18-year average red salmon catch of 438,000 (Table 7).

Preliminary catch age composition varied slightly from that of the total run. The 1964 parent year contributed 67% 5-year fish, and the 4-year and 6-year fish contributed 27 and 6% respectively. The preliminary sex ratio of the commercial red salmon catch was 53% males and 47% females, and the preliminary average weight was 5.4 pounds.

The king salmon catch of 2,100 was just below the 18-year average of 2,200 while the 2,000 chum salmon catch was the lowest in the past 19 years. This catch was 92% lower than the 18-year average of 23,000.

The coho salmon catch of 9,000 was the largest catch recorded since 1951. This catch was processed by one small packing plant at Ugashik Village, and one small salter and one salting plant at Pilot Point. More effort has been directed to this species during recent seasons.

Escapement

Escapement counts were again made from towers on the Ugashik River at the outlet of Lower Ugashik Lake. Aerial surveys of the lagoon and river supplemented the escapement estimates.

Evaluating escapement into the Ugashik River during the season is more difficult than other river systems of comparable length in Bristol Bay. The river is muddy to the clear water lagoon just below the lake outlet and fish school in this muddy water area before migrating to the tower sites.

The inside test fishing program, conducted at Ugashik Village in 1968, was not conducted in 1969. This program was dropped due to the expected decrease in fishing effort. An attempt was made to assess the escapement in relation to commercial catch from the Ugashik district and Ugashik Village set net sites.

Total Ugashik River red salmon escapement was 160,000 (Table 1). This was the third lowest escapement since 1951. Peak escapement period was July 14-15, when 83% of the fish passed the tower. These fish, as mentioned earlier, schooled in muddy water until strong winds aided their initial push toward the lake.

Preliminary age composition of the district escapement was 71% 5-year fish from the 1964 parent year escapement, 25% 4-year fish from 1965, and 4% 6-year fish from 1963. Preliminary escapement sex ratio was 51% female and 49% male.

NUSHAGAK DISTRICT

The Nushagak district fishing boundaries remained unchanged from 1968, except for relocation of the buoy marking the lower limit of the Snake River section and the upper limit of the Igushik section. No boundary changes were implemented during the course of the salmon season. Separate openings were again employed for the fourth consecutive year between the Nushagak and Igushik sections. The Snake River section, although reduced in total area by the boundary change, remained closed to fishing from June 15 through July 15 in an effort to protect the small expected red salmon return.

Price negotiations between the major processors and the two main fisherman organizations (i.e., Western Alaska Co-operative Marketing Association representing the independent resident fishermen and the Alaska Independent Fishermen's Marketing Association representing non-resident fishermen) brought the Nushagak fishery to a "stand-still" between June 20 and July 3. Although delivery and weighing of fish were topics of considerable discussion among the associations and canneries, the price paid to the fishermen was the major hang-up. The eventual agreement (\$.24 per pound for red salmon) was a 2.6¢ raise over the 1968 price of 21.4¢ per pound. Further, unlike 1968 when the average fish weight was set before the season, the new agreement in 1969 provided for sample weighing to determine average weight, upon which payment to the fishermen would be made.

Price paid per pound by species for 1968-69 is shown below for comparison purposes:

<u>Species</u>	<u>Price Paid Per Pound</u> <u>(Independent Fishermen)</u>	
	<u>1968</u>	<u>1969</u>
Reds	21.4¢	24¢
Kings	16.1¢	18¢
Chums	10.0¢	11¢
Pinks	10.0¢	11¢
Cohos	18.1¢	24¢*

(*Provided that after July 15, the price of coho salmon shall be 18¢ per pound).

Independent buyers in the Nushagak continued to operate throughout the strike period, but less than 17,000 fish were delivered during the 13-day strike period (June 20-July 3), an indication of how most fishermen felt toward the offers by the major processors.

The strike was concluded late in the evening of July 2 by a vote of 254 for and 86 against accepting the cannery offer of \$.24 per pound for red salmon. Independent processors, primarily fresh-frozen and cured fish operators, paid as high as \$.25 per pound for king salmon and comparable prices for the other species.

The emergency order period, which began on June 16 and continued through July 19, was preceded by a 5-day-per-week fishery on Nushagak king salmon stocks.

Pre-season fishing gear registration for the district was 890 gill nets, including both drift and set net gear, 79 more than in 1968, and a record high registration for the Nushagak district (Table 3). Of this total, 81% were resident fishermen and 19% non-residents. Of the 275 set nets registered for fishing in 1969, only about 150 actually participated in the fishery. Many resident fishermen license both drift and set net gear, but do not actually use their set net gear, thus the pre-season set net registration is always higher than the number in actual use.

The highest effort recorded for drift and set net gear, based on fish ticket delivery tabulation, indicated that 395 units of drift and 130 units of set net gear for a total of 525 units of gear participated in the fishery at the peak of the red salmon run

(July 3-12) (Table 8). The large discrepancy between pre-season registration and actual gear in use during the season is accounted for by transfers of gear to other fishing districts and by double-registrants as discussed above. The amount of gear in use at the peak of the red salmon run has remained remarkably similar in the Nushagak district since 1967 (i.e., 1967-569; 1968-566 and 1969-525).

The total district inshore red salmon forecast of 2,473,000 had 1,618,000 assigned to Wood River; 424,000 to Igushik River; 334,000 to Nuyakuk River; and 97,000 to Snake River and the Nushagak-Mulchatna system combined (Table 2). Total return runs based on preliminary apportionment by river system were: Wood - 1,033,000; Igushik - 630,000; Nuyakuk - 259,000; and Snake/Nushagak-Mulchatna - 64,000; for a total run of 1,986,000 or 80% of the forecasted run to the district (Tables 1 and 2).

The total run of king salmon was estimated to be from 111,000 to 121,000 while the chum salmon run approximated 254,000 to 274,000 fish.

Eleven processors bought salmon in the Nushagak district in 1969 (Table 15). The three major canneries operated 10 canning lines (i.e., C.W.F. - three 1 lb. talls and one 1/2 lb.; P.A.F. - two 1 lb. talls and one 1/2 lb.; and Queen - one 1 lb. tall, one 1/2 lb. and one 1/4 lb.), while six fresh-frozen and cured fish operators bought fish throughout the season.

Management

The king salmon catch prior to commencement of the emergency field regulation period (June 16) was 32,000, slightly higher than the average catch (26,000) for this stage of the run. Two 24-hour periods were allowed during the first week of emergency field regulation (June 15-21), with the first period (on June 16-17) producing good catches totaling 20,000 kings and the second (on June 19-20) producing a poor catch of 3,000 fish (Table 8).

The period on June 19-20 marked the last productive king salmon catch prior to settlement of the price dispute on July 2 (Table 8). Red salmon gill net mesh (5-3/8" stretched measure) was allowed in the fishery effective June 21, however, all productive fishing stopped due to the price dispute.

Between June 20 and July 3, the Department announced five fishing periods totaling 96 hours (Table 4). The catch of all species amounted to 17,000 fish which reflected the lack of effort due to the contract negotiations. The periods opened by the Department during the price dispute were justified on the basis of adequate escapement and no harvest (or very little) and with the hope that open fishing periods would force the strike issue into a quick agreement. Pressure was brought to bear on the Department to close all fisheries until the price dispute was settled.

King salmon catches through June 22 totaled over 55,000, which was equal to the average harvest when compared with the previous 10 years.

Prior to the settlement of the strike on July 2, the Nushagak outside test fishing boat made two trips and produced only 709 red salmon on 27 drifts. It was evident from the poor test fishing results and low Wood River escapement (40,000 through July 2) that the Wood River run had yet to make a significant appearance. The Igushik River escapement had climbed to 58,000 through July 2, but had dropped from 10-12,000 per day on June 27-28 to 7-8,000 per day on June 29-July 2. Continued aerial surveillance on both rivers failed to show any large concentrations of fish.

At 3 p.m. on July 2 a 24-hour fishing period was announced for July 3-4; subsequently, later that same day, the fishermen and processors came to an agreement and signed a two-year contract. The catch for the July 3-4 period was good as expected, amounting to 394,000 red salmon (Table 8). Both major processors (P.A.F. and C.W.F.) were on a 2,000 fish per boat limit during the entire period. All fleet efforts were concentrated between the inner boundary line and Ekuk Bluff with very little fishing effort on down toward the outer line. The Wood River escapement continued to mount slowly and by midnight of July 4 had reached 221,000. With a total harvest of 406,000 red salmon and low escapement, 29% of the target goal, it was decided to keep the Nushagak section closed in order to increase the Wood River escapement rate. The Igushik River red salmon escapement continued to build slowly and by 3 p.m. on July 4 had reached 67,000, 34% of the escapement goal. The escapement rate held up through the evening of July 4 and a 12-hour fishing period was announced at 9 p.m. for the Igushik section to begin at 5 p.m. on July 5 (Table 4). Expectations on July 4 were that we could probably open the Igushik section to continuous fishing, but to be on the safe side the fishery was extended, and when the escapement rate continued to accelerate, was opened until further notice. The subsequent final Igushik River escapement of 512,000 reds was well in excess of the published escapement goal of 200,000 (Tables 1 and 2).

Analysis of time of entry into the fishery and upriver travel rate shows that over 400,000 red salmon, or 84% of the final season escapement, had passed the fishery and entered the river prior to the first "fishing" period on July 3-4. The peak of the run in the fishery was estimated to be June 28-30, which is normal for this system.

Test fishing efforts were intensified in the Nushagak section in an effort to locate any significant build-up of red salmon. Subsequent test fishing effort on July 7 and 8, caught only 252 reds in 11 drifts and 81 reds in 8 drifts, and further the chum salmon catch totaled 26% and 41% on both days, a sure sign that the red salmon run had peaked and was virtually over.

Continuous aerial surveys of Wood River failed to detect any large build-up of fish, and though July 8 only 434,000 or 58% of the escapement goal had been achieved. With an assurance of 500,000 red salmon in the Wood River system and feeling that the red run was virtually over, a 24-hour fishing period was announced for July 9-10 for the Nushagak section (Table 4). This fishing period was extended on July 10 for another 24-hours when it became clear that chum salmon catches were as high as 40% of the total catch (Table 8). Total catch for the 48-hour period was 160,000 red salmon and 69,000 chum salmon, which brought the total district red salmon harvest to 681,000 with escapement totaling 1,074,000 (i.e., Wood - 553,000; Igushik - 451,000; Nuyakuk - 18,000; and Nushagak - 52,000) (Table 8).

After a 26-hour closure the Nushagak section was re-opened for 48 hours on July 12-14, which produced a catch of 81,000 reds and 46,000 chums (Table 8). Analysis of the chum salmon escapement past the Nushagak River tower (25,000 through July 14) and the relatively poor catch to date (160,000), brought about a 50-hour closure from July 14-16.

The fishery was re-opened on July 16 and continued open until the end of the emergency order period on July 19. Total catch during this last 69-hour opening was 22,000, most of which were chums (Table 8).

In the course of the season during the emergency order period (June 16 - July 19) 333 hours of fishing time were allowed in the Nushagak section and 328 hours in the Igushik section (Table 4). Establishment of the separate Nushagak and Igushik fishing sections again proved beneficial and aided materially in achieving an adequate escapement in the Wood River system while allowing continuous fishing on Igushik River red salmon stocks.

The weather in 1969 was very mild and warm during the "red salmon season" and this good weather extended into the fall fishery on coho salmon. Violent and almost continuous storms from early June to June 17 resulted in good catches of king salmon, which is dependent on stormy weather.

The over-all preliminary age composition of the Nushagak district red salmon catch and escapement combined was 46% 4-year fish from the 1965 parent year escapement, 52% 5-year fish from 1964, and 2% 6-year fish from 1963.

Catch

The Nushagak district commercial catch for all species of salmon was 1,106,000, representing 15% of the total Bristol Bay catch for 1969 (Table 10). This catch was 34% lower than the 18-year average of 1,681,000 for the district.

The red salmon catch of 773,000 represented 11% of the Bristol Bay total harvest, and was 16% below the average catch of 925,000 since 1951. As 1969 was not a "pink year" the red catch contributed 70% of the total district harvest (Table 8). Preliminary age composition of the district red salmon catch was 50% 4-year fish from the 1965 parent year escapement, 48% 5-year fish from 1964 and 2% 6-year fish from 1963. The sex ratio was 51% males and 49% females. Average weight for reds based on random sampling was 5.6 pounds.

The Nushagak district king salmon catch of 81,000 was the sixth largest catch in the last 18 years, and was 26% higher than the average catch of 64,000 for this period. Over 36% or 606,000 pounds were marketed as fresh-frozen or mild-cured products, the balance being canned and producing a case pack of over 12,000 on a 1 lb. tall basis. Average weight of kings sampled randomly throughout the season was 21.0 pounds. The sex ratio was 50% males and 50% females.

The total catch of chum salmon of 214,000 was 2% lower than the average district catch of 219,000 for the past 18 years. Average weight was 6.1 pounds, while the sex ratio of the commercial catch was 44% males and 56% females.

Late season catches of coho salmon amounted to 38,000 and represented a 34% increase over the past 18-year average. Average weight in the commercial catch was 6.5 pounds, while the sex ratio of the commercial catch was 62% males and 38% females.

Escapement

Counting towers were maintained on Wood, Igushik, Nuyakuk and Nushagak Rivers for the purpose of enumerating red salmon escapement into these systems. Aerial surveys were employed to determine red salmon escapement into the Snake River system, where a tower station is not maintained.

Total red salmon escapement to the district was 1,213,000 or 61% of the total red run (Table 1). The escapements and percent of the district total by system were: Wood - 604,000 (50%); Igushik - 512,000 (42%); Nuyakuk - 70,000 (6%); Nushagak/Mulchatna - 17,000 (1%); and Snake - 9,000 (+%) (Table 1). The 1969 total district escapement was 4% higher than the 18-year average of 1,162,000.

Escapements within the desired range were achieved in the Wood and Snake River systems and fell short in the Nuyakuk and Nushagak-Mulchatna River systems (Table 2). Escapements into the Nuyakuk, Nushagak-Mulchatna and Snake River systems cannot be controlled as the run is managed for the more important Wood and Igushik River runs. The escapement of 512,000 red salmon into Igushik River was well above the upper escapement range (Table 2). It is conservatively estimated that another 200,000 reds would have entered the commercial catch had not the price dispute curtailed all fishing activities between June 21 and July 3.

Preliminary analysis of scales showed that the major age classes of the red salmon escapement to the major rivers were: Wood - 46% 4-year fish from 1965, 51% 5-year fish from 1964, and 2% 6-year fish from 1963; Igushik - 39% 4-year fish, 60% 5-year fish and 1% 6-year fish; and Nuyakuk - 54% 4-year fish and 43% 5-year fish. Overall age composition of the Nushagak district red salmon escapement was 44% 4-year fish from the 1965 parent year escapement, 54% 5-year fish from 1964 and 2% 6-year fish from 1963. Sex ratios of the major river system red salmon escapements were: Wood - 45% males and 55% females; Igushik - 45% males and 55% females; and Nuyakuk - 48% males and 52% females.

To derive an estimate of the Nushagak district king salmon escapement, it is necessary to evaluate: spawning ground surveys (5,300 counted by aerial means); index tower counts (6,600 counted past the Nushagak tower) and commercial (81,000) and subsistence (7,100) catches. The estimated total district king escapement of 30,000 to 40,000 was made after analysis of these data. Although the commercial harvest was comparable in 1968-69 (78,000 in 1968 and 81,000 in 1969), the spawning escapement was not. On key index streams where aerial survey coverage was comparable, the 1969 spawning king salmon escapement was less than half of that observed in 1968. Summing aerial survey estimates of eight key index streams in the Nushagak-Mulchatna drainage (Muklung, Iowithla, Nuyakuk, Klutispaw, King Salmon, Chichitnok, Stuyahok and Kuktuli), show that the 1969 spawning escapement, as observed by aerial means, was 4,850 kings compared with 10,190 kings in the same streams in 1968.

With so little data available it is not possible to determine whether the 1969 spawning escapement was adequate or not, but it does point out the need to continue these surveys on a yearly basis.

The index escapement of 26,000 chum salmon past the Nushagak River counting tower was the lowest since 1966. The most probable total escapement to the district after analysis of tower counts, aerial surveys and commercial-subsistence catches, was estimated to be in the range of 40,000 - 60,000.

TOGIAC DISTRICT

The Togiak district is comprised of five sections (Cape Peirce, Osviak, Matogak, Togiak and Kulukak) with the majority of the commercial catch originating from the Togiak section.

Licensed fishing gear for the district in 1969 was 125 gill nets, including both drift and set net gear, which was 14 units more than in 1968 (Table 3). The majority of the drift fleet of double-end sailboat conversions and skiffs fished the Togiak section, while 22 units of gear operated in the Osviak-Matogak area and 16 units in the Kulukak section. The Togiak district salmon fishery is almost entirely a resident fishery, primarily from the two area villages, Togiak and Twin Hills.

The district inshore red salmon forecast was for 180,000 fish (Table 2). Total runs for the various river systems in the district in 1969 totaled 259,000 red salmon, or 44% higher than the forecasted run (Tables 1 & 2).

The total run of king salmon was estimated to be from 26,000 to 28,000, while the chum salmon run was estimated at 152,000, catch and escapement combined.

The relatively strong red salmon run in the Togiak River section resulted in increased fishing time over previous years. The Togiak River section was open 4 days-per-week in 1969, while the remaining four sections were open 5 days-per-week (Table 4).

Three processors bought salmon in the Togiak district in 1969 (Table 15). The major processor was Togiak Fisheries, Inc., which operates a two-line cannery (one 1/2 lb. line and one 1/4 lb. line) at the mouth of the Togiak River. Two cured-fish operators (Alaskan Smokey Joe's, Inc. and Alaska Freshwater Fisheries) also bought fish at Togiak in 1969, primarily during the late-season coho salmon fishery.

Management

The fishing season progressed as expected, although concern was felt over the low weekly red salmon catches in the Togiak section. Red salmon accumulative catch of 39,000 by July 5 was identical to that of 1968 when only 73,000 reds entered the commercial harvest for the entire season (Table 9). The similarity between 1968 and 1969 in both catch and escapement, resulted in a decision to restrict the fishery an additional 2 days over the regular 3-day weekend closure (Table 4). The resultant 5-day closure (July 4-9) was implemented during the peak of the run in the fishery and resulted in decreased catches for the week ending July 11 (29,000 reds) (Table 9). A regular 4-day weekly fishing period was allowed the following week (July 14-18) when the red salmon escapement of 32,000 through July 12, showed a daily rate which was interpreted to result in a season escapement well in excess of season goals. The fishery harvested another 41,000 red salmon during the 4-day week of July 14-18, which brought the season accumulative catch to 109,000 and reduced the daily rate past the Togiak River tower.

Weather was not a limiting factor for the fishery in the Togiak district in 1969.

Preliminary age composition of the red salmon catch and escapement combined was 60% 4-year fish from 1965 parent year escapement, 33% 5-year fish from 1964 and 6% 6-year fish from 1963.

Catch

The Togiak district commercial catch for all species of salmon was 251,000, representing 4% of the total Bristol Bay catch for 1969 (Table 10). This catch was 12% higher than the 15-year average of 224,000 for the district. The Togiak section accounted for 241,000 fish, while Osviak-Matogak and Kulukak sections contributed 5,000 fish each (Table 9).

The 1969 red salmon catch of 134,000 was 11% above the 15-year average of 121,000 (Table 9). Red salmon contributed 54% of the total district harvest in 1969 (Table 9). Preliminary age composition of the district red salmon catch was 50% 4-year fish from the 1965 parent year escapement, 40% 5-year fish from 1964 and 9% 6-year fish from 1963. Sex ratio of the commercial catch was 57% males and 43% females, while average weight of reds sampled randomly throughout the season was 5.8 pounds.

The harvest of over 20,000 king salmon was the largest in the history of the fishery, and was 173% higher than the 15-year average catch of 7,000 (Table 9). The Togaik king catch accounted for 16% of the total Bay catch in 1969 (Table 10). Sex ratio of the commercial catch was 59% males and 41% females. Average weight of kings sampled from the catch was 21.7 pounds.

The total catch of 66,000 chum salmon was the ninth largest in the history of the fishery and 25% lower than the average catch of 89,000 for the past 15 years. The chum salmon harvest was centered in the Togiak River section (61,000) while the usually strong chum producers, Osviak-Matogak and the Kulukak system, produced only 4,000 and 1,000 chums respectively (Table 9). Sex ratio of the commercial chum catch was 56% males and 44% females, while the average weight was 6.8 pounds.

Late season catches of coho salmon totaled 29,000 fish, which was 4,000 fish higher than the record catch in 1968. The 1969 catch was 46% higher than the past three years average catch of 20,000, the period when extensive late-season fishing was conducted. Sex ratio of the commercial catch based on a limited sample was 56% males and 44% females, while the average weight was 8.7 pounds.

Escapement

A counting tower was again maintained on the Togiak River to enumerate red salmon escapement into Togiak Lake, while red, king and chum salmon escapements in the remainder of the Togiak district were estimated by use of aerial surveys.

The Togiak River red salmon escapement goal for 1969 was 100,000 fish, with a management range of 70 to 130,000 (Table 2). Togiak River escapement of 109,000 reds accounted for 87% of the district escapement of 125,000 (Table 1), and was less than 9% from the escapement goal. Total red salmon escapement to the district was 13% higher than the 18-year average of 111,000. Preliminary age composition of the red salmon escapement was 70% 4-year fish from the 1965 parent year escapement, 26% 5-year fish from 1964 and 3% 6-year fish from 1963. Sex ratio of the red escapement was 54% males and 46% females.

King salmon escapement was estimated to be approximately 6,000 to 8,000, with the majority of the fish spawning in the main Togiak River and connecting tributaries.

Chum salmon aerial surveys in 1969 of eight streams in the western portion of the district (west of Togiak River) produced an escapement estimate of 37,000 or 43% of the total district chum escapement, as compared with 77,000 and 22% in 1968. Togiak River and five connecting tributaries received a spawning escapement of 25,000 chums or 29% of the district escapement, as compared to 230,000 and 66% in 1968. Six streams east of the Togiak River contributed 24,000 spawning chums in 1969 or 28% of the district total, as compared to 41,000 and 12% in 1968. Total estimated chum salmon escapement for the entire district in 1969 was 86,000, as compared to 348,000 in 1968.

OTHER FISHERIES

HERRING FISHERY

For the third straight season interested processors attempted to commercially harvest herring sac-roe and roe-on-kelp resources in the Togiak district before the advent of the salmon season.

This new and developing fishery has been plagued by operational difficulties, fluctuating seasonal abundance of spawning herring stocks, poor weather conditions during the fishery, an inability to forecast run timing to the extent necessary to conduct a feasible operation and a very unstable market.

Only two processors participated in the fishery in 1969. The herring catch amounted to over 94,000 pounds valued at \$9,000.00 as compared to 269,000 pounds in 1967 and 182,000 pounds in 1968 (Table 14). The fishery this season was hampered by strong winds during the peak of the run, which seriously affected fishing efforts.

The herring roe-on-kelp harvest was limited to 10,000 pounds valued at \$6,000.00 of Fucus rockweed kelp, the same type harvested in 1968 for the first time. The 1968 harvest of roe-on-kelp was 54,600 pounds.

The unstable market and other considerations mentioned earlier have precluded to date any serious exploitation of these resources. A further discouraging factor is the increased exploitation of these and other Bering Sea herring stocks by the Japanese high seas herring fleet.

SUBSISTENCE FISHERY

Salmon subsistence catches for personal use and dog food consumption have been recorded since 1963 in Bristol Bay. This subsistence fishery is primarily centered around the Naknek-Kvichak and Nushagak drainages where local inhabitants, especially outlying villagers, are still dependent on salmon for winter dog food as well as to augment their own diets. Subsistence catches in the major two drainages approach 100 to 170,000 salmon on an annual basis.

In 1969, the subsistence salmon catch was over 127,000 fish of all species for the Naknek-Kvichak and Nushagak districts. In the Naknek-Kvichak district red salmon accounted for over 98% of the catch, while in the Nushagak district over 55% of the subsistence catch were reds, the balance being made up of king, chum, pink and coho salmon.

FISHERY BY-PRODUCTS

The salmon egg industry has continued to grow in Bristol Bay from a small scale basis in 1966 to a million dollar enterprise in 1969. Salmon eggs were processed at 11 shore-based canneries and three floaters in 1969, with final production estimated at 924,000 pounds, valued at approximately \$988,000. (Table 13). As could be expected red salmon roe accounted for over 76% of the total production. This is a 37% increase over the 585,000 pound production in 1968.

MISCELLANEOUS

Production of fresh-frozen red and king salmon continued to accelerate in Bristol Bay in 1969, with 18 operators involved in fresh, frozen or cured fishery products (Table 15).

Fresh-frozen and cured production of king salmon, primarily from the Nushagak district, amounted to 41,000 fish weighing 835,000 pounds, up from 1968 when 504,000 pounds were produced (Table 12).

Production of red, chum, pink and coho salmon, which were primarily cured, amounted to 246,000 fish and 1,495,000 pounds (Table 12). This is an increase of 75% over the 1968 production of 854,000 pounds.

The first wholesale value of all fresh-frozen and cured commercial production was estimated to be \$1,251,000.00.

One freshwater commercial permit was issued in 1969. One fisherman fished Okstukuk Lake, a small lake heading the Kokwok River, a tributary of the Nushagak River system. Fishing was conducted from early November to mid-December with the catch amounting to 2,900 pounds of fish, most of which (88%) were whitefish.

FIELD PROGRAMS

Field program activities including ten escapement enumeration and sampling programs, five commercial catch sampling programs, four smolt enumeration studies, spawning ground surveys and winter mortality studies were essentially similar to those of 1968. The Federal-Aide offshore test fishing program near Port Moller was continued as well as the outside and inside test fishing programs which have proven to be of substantial management value in the regulation of the red salmon fishery.

TABLE 1. Summary of Bristol Bay red salmon catch and escapement, 1969.^{1/}

District and River System	Escapement	Catch	Total Run
<u>NAKNEK-KVICHAK</u>			
Kvichak River	8,394,204	3,272,515	11,666,719
Naknek River	1,331,202	1,140,493	2,471,695
Alagnak River	182,490	242,064	424,554
	9,907,896	4,655,072	14,562,968
<u>EGEGIK</u>	1,015,554	889,322	1,904,876
<u>UGASHIK</u>	160,380	169,845	330,225
<u>NUSHAGAK</u>			
Wood River	604,338	428,357	1,032,695
Igushik River	512,328	117,527	629,855
Snake River	9,300	0	9,300
Nuyakuk River	69,828	189,436	259,264
Nush.-Mul. System	16,792	37,887	54,679
	1,212,586	773,207	1,985,793
<u>TOGIAK</u>			
Togiak River	109,266		
Togiak Tributaries	7,400		
Kulukak System	8,400		
	125,066	134,252	259,318
TOTAL BRISTOL BAY	12,421,482	6,621,698	19,043,180

^{1/} Final catch and escapement data. However, apportionment of the inshore catch by river system to the Naknek-Kvichak and Nushagak districts is preliminary.

TABLE 2. Summary of Bristol Bay red salmon inshore forecast and escapement goals, 1969.

District and River System	Inshore Forecast Run ^{1/}	Escapement	
		1969 Goal	Management Escapement Range
<u>NAKNEK-KVICHAK</u>			
Kvichak River	12,780,000	6,000,000	5,000,000- 7,000,000
Naknek River	2,741,000	1,000,000	800,000- 1,200,000
Alagnak River ^{2/}	416,000	160,000	120,000- 200,000
Total	15,937,000	7,160,000	5,920,000- 8,400,000
<u>EGEGIK</u>	1,972,000	700,000	500,000- 900,000
<u>UGASHIK^{3/}</u>	712,000	400,000	300,000- 500,000
<u>NUSHAGAK</u>			
Wood River	1,618,000	750,000	500,000- 1,000,000
Igushik River	424,000	200,000	150,000- 250,000
Snake River ^{2/}	22,000	10,000	5,000- 15,000
Nuyakuk River ^{2/}	334,000	150,000	100,000- 200,000
Nush.-Mul. System ^{2/}	75,000	35,000	20,000- 50,000
Total	2,473,000	1,145,000	775,000- 1,515,000
<u>TOGIAC ^{4/}</u>	180,000	100,000	70,000- 130,000
TOTAL FORECAST	21,274,000	9,505,000	7,565,000-11,445,000

^{1/} Final Forecast of 1969 Bristol Bay Red Salmon Run. Alaska Department of Fish and Game, unpublished.

^{2/} These systems cannot be managed separately from the major system in their district. Consequently the harvest rates are merely the harvest rates anticipated for the major system in the district. The corresponding escapement goals do not necessarily coincide with the escapement levels which would be achieved if the systems could be managed independently.

^{3/} Excluding Mother Goose system red salmon run.

^{4/} Excluding red salmon runs to the Togiak Tributaries and Kulukak system.

TABLE 3. Bristol Bay pre-season gear registration by district and type of gear, 1969.^{1/}

District	Type of Gear ^{2/}		Total
	Drift	Set	
<u>NAKNEK-KVICHAK</u>			
Resident	353	349	702
Non-resident	<u>502</u>	<u>48</u>	<u>550</u>
Total	855	397	1,252
<u>ELEGIK</u>			
Resident	125	139	264
Non-resident	<u>155</u>	<u>65</u>	<u>220</u>
Total	280	204	484
<u>UGASHIK</u>			
Resident	51	54	105
Non-resident	<u>23</u>	<u>19</u>	<u>42</u>
Total	74	73	147
<u>NUSHAGAK</u>			
Resident	478	241	719
Non-resident	<u>137</u>	<u>34</u>	<u>171</u>
Total	615	275	890
<u>TOGIAK</u>			
Resident	103	21	124
Non-resident	<u>1</u>	<u>0</u>	<u>1</u>
Total	104	21	125
<u>BRISTOL BAY</u>			
Resident	1,110	804	1,914
Non-resident	<u>818</u>	<u>166</u>	<u>984</u>
Total	1,928	970	2,898

^{1/} Based upon gear license count - registration at start of season-does not incorporate district transfers.

^{2/} Legal gear in 1969 amounted to 125 fathoms for drifters and 50 fathoms for set netters.

TABLE 4. Bristol Bay emergency order fishing periods by district, 1969.1/

NAKNEK-KVICHAK DISTRICT				EGEGIK DISTRICT			
Date & Time		Hours		Date & Time		Hours	
<u>NAKNEK AND KVICHAK SECTIONS:</u>				June 23	4 am - June 24	4 am	24
June 23	5 am - June 24	5 am	24	June 25	5 am - June 26	5 am	24
June 25	6 am - June 26	6 am	24	June 27	7 am - June 28	7 am	24
June 27	8 am - June 28	8 am	24	June 29	7 am - June 29	7 pm	12
June 29	9 am - June 29	9 pm	12	July 1	10 am - July 1	10 pm	12
July 1	11 am - July 1	11 am	12	July 7	4 am - July 7	4 pm	12
July 1	11 pm - July 2	11 am	122/	July 7	4 pm - July 19	9 am	281
July 3	1 am - July 3	1 pm	12	TOTAL HOURS ^{3/} /			389
July 5	3 am - July 5	3 pm	12	UGASHIK DISTRICT			
July 7	5 pm - July 8	5 am	12	Date & Time			Hours
July 8	5 am - July 19	9 am	268	June 23	4 am - June 24	4 am	24
TOTAL HOURS ^{3/} /			412	June 25	5 am - June 26	5 am	24
<u>NAKNEK SECTION ONLY:</u>				June 27	7 am - June 28	7 am	24
July 3	1 pm - July 19	9 am	380	June 29	8 am - June 30	8 am	24
TOTAL HOURS ^{3/} /			380	July 1	10 am - July 2	10 am	24
NUSHAGAK DISTRICT				July 3	1 pm - July 4	1 pm	24
Date & Time			Hours	July 5	3 pm - July 6	3 pm	24
<u>NUSHAGAK AND IGUSHIK SECTIONS:</u>				July 8	7 pm - July 9	7 am	12
June 16	2 pm - June 17	2 pm	24	July 12	8 am - July 12	8 pm	12
June 19	3 pm - June 20	3 pm	24	TOTAL HOURS ^{3/} /			192
June 23	6 am - June 24	6 am	24	TOGIAK DISTRICT*			
June 25	7 am - June 26	7 am	24	Date & Time			Hours
June 27	9 am - June 28	9 am	24	June 16	9 am - June 20	9 am	96
June 29	10 am - June 29	10 pm	12	June 23	9 am - June 27	9 am	96
July 1	12 n- July 1	12 mn	12	June 30	9 am - July 4	9 am	96
July 3	3 pm - July 4	3 pm	24	July 9	9 am - July 11	9 am	48
July 9	8 am - July 10	8 am	24	July 14	9 am - July 18	9 am	96
July 10	8 am - July 11	8 am	24	TOTAL HOURS ^{3/} /			432
July 12	10 am - July 14	10 am	48	*The Togiak section was open for fishing			
July 16	12 n - July 19	9 am	69	four days per week except for a forty-			
TOTAL HOURS ^{3/} /			333	eight hour closure from July 7 to July 9.			
<u>IGUSHIK SECTION ONLY:</u>				The Kulukak, Osviak, Matogak and Cape			
July 5	5 pm - July 6	5 am	12	Pierce sections were open five days per			
July 6	5 am - July 7	9 am	28	week.			
July 7	9 am - July 19	9 am	288				
TOTAL HOURS ^{3/} /			328				

1/ Emergency order period extended from 9 am June 16 to 9 am July 19 in the Nushagak district and from 9 am June 23 to 9 am July 19 in the Naknek-Kvichak, Egegik and Ugashik districts.

2/ Rescinded by the Governor's Task Force.

3/ Hours fished only during emergency order period.

TABLE 5. Naknek-Kvichak district commercial catch by species and period, 1969.^{1/}

Period	Hours	Effort		Catch by Species					Totals
		Drift	Set	Reds	Kings	Chums	Pinks	Cohos	
6/16-21	5 days	2		808	67				875
6/23-24	24	38	17	7,810	198	174			8,182
6/25-26	24	105	35	49,269	407	663			50,339
6/27-28	24	257	59	331,432	277	1,112			332,821
6/29	12	259	60	449,015	284	576			449,875
7/ 1	12	18	11	21,343	19	31			21,393
7/ 1- 2	12 ^{2/}								
7/ 3	12 ^{3/}	957	215	1,584,608	3,094	3,107			1,590,809
7/ 5	12	900	187	385,565	1,056	778			387,399
7/ 7-13	7 days	1,162	282	1,697,318	8,851	22,895	107	1	1,729,172
7/14-19	6 days	582	162	106,380	2,627	9,540	39		118,586
7/21-26	5 days	46	48	17,875	1,934	2,018	42		21,869
7/28-8/2	5 days	10	32	2,465	194	1,256	16	16	3,947
8/ 4- 9	5 days		10	262	8	385	1		656
8/11 ^{2/}		4		922					922
Totals				4,655,072	19,016	42,535	205	17	4,716,845
Percent of District Catch				98.7	0.4	0.9	0.0	0.0	100.0

^{1/} The fishermen-industry price dispute severely hampered the rate of commercial exploitation prior to July 3.

^{2/} Open period rescinded by the Governor's Task Force.

^{3/} Naknek section open until further notice effective 1 p.m. July 3.

TABLE 6. Egegik district commercial catch by species and period, 1969.^{1/}

Period	Hours	Effort		Catch by Species					Totals
		Drift	Set	Reds	Kings	Chums	Pinks	Cohos	
6/ 2- 7	5 days	10	3	4,672	31				4,703
6/ 9-14	5 days	2	4	330	143				473
6/16-21	5 days	23	50	3,618	368	13		1	4,000
6/23-24	24	79	68	29,437	429	364			30,230
6/25-26	24	106	79	49,677	444	419			50,540
6/27-28	24	157	88	40,818	347	438			41,603
6/29	12	170	100	218,010	111	432			218,553
7/ 1	12	232	102	256,055	163	506			256,724
7/ 7-13	7 days	208	145	227,761	745	4,437	1		282,944
7/14-19	6 days	39	60	8,256	15	410	3		8,684
7/21-26	5 days	1	3	508	4	274			786
7/28-8/2	5 days		1	154		192		90	436
8/ 4- 9	5 days	2	5	21		231		844	1,096
8/11-16	5 days	4	10	5	1	107		2,343	2,456
8/18-23	5 days	4	10			12	1	877	890
8/25-30	5 days		5					998	998
9/ 1→			1					395	395
Totals				889,322	2,801	7,835	5	5,548	905,511
Percent of District Catch				98.2	0.3	0.9	0.0	0.6	100.0

^{1/} The fishery was not affected seriously by the fisherman-industry price dispute.

TABLE 7. Ugashik district commercial catch by species and period, 1969.

Period	Hours	Effort		Catch by Species					Totals
		Drift	Set	Reds	Kings	Chums	Pinks	Cohos	
6/ 2- 7	5 days	4			30				30
6/ 9-14	5 days	10		4	341				345
6/16-21	5 days	16	4	285	1,091	5			1,381
6/23-24	24	14	4	1,477	281				1,695
6/25-26	24	5	11	1,504	63	1			1,568
6/27-28	24	9	15	5,516	42	2			5,560
6/29-30	24 <u>1/</u>								
7/ 1- 2	24	35	16	40,712	46	122			40,880
7/ 3- 4	24	47	12	44,787	101	39			44,927
7/ 5- 6	24	50	13	42,818	66	33			42,917
7/ 8- 9	12	49	15	17,052	40	310			17,402
7/12	12	46	12	11,004	46				11,050
7/21-26	5 days	25	18	4,405	22	610			5,037
7/28-8/2	5 days	2	6	268	1	93			362
8/ 4- 9	5 days <u>2/</u>								
8/11-16	5 days	9	12	5		491		1,075	1,571
8/18-23	5 days	9	12			210		1,596	1,806
8/25-30	5 days	12	15	5		56		2,810	2,871
9/ 1 \rightarrow		17	8	3		23	1	3,811	3,838
Totals				169,845	2,107	1,995	1	9,292	183,240
Percent of District Catch				92.7	1.2	1.0	0.0	5.1	100.0

1/ No fishing due to strike conditions and processing difficulties, the balance of the season was not affected by the fishermen-industry price dispute.

2/ No commercial harvest.

TABLE 8. Nushagak district commercial catch by species and period, 1969.^{1/}

Period	Hours	Effort		Catch by Species					
		Drift	Set	Reds	Kings	Chums	Pinks	Cohos	Totals
5/26-31	5 days	46			1,468				1,468
6/ 2- 7	5 days	142			16,118				16,118
6/ 9-14	5 days	200	1	139	14,665	2			14,806
6/16-17	24	217	3	31	19,606	23			19,660
6/19-20	24	236	2	143	3,188	69			3,400
6/23-24	24	6		7	85	9			101
6/25-26	24	14	1	1,199	381	621			2,201
6/27-28	24	17	6	957	2,273	354	10		3,594
6/29	12	5	4	131	441	186			758
7/ 1	12	10	8	9,483	162	604	1		10,250
7/ 3- 4	24	358	99	393,706	10,495	37,247	6		441,454
7/ 5- 8 ^{2/}	79	320	1	115,429	697	4,983	12		121,121
7/ 9-11	48	395	104	159,506	6,734	69,444	39		235,723
7/12-14	48	317	130	81,190	3,175	45,959	45		130,369
7/16-19	69	272	107	6,524	532	15,278	61	96	22,491
7/21-26	5 days	186	71	4,260	605	33,415	41	4,247	42,568
7/28-8/2	5 days	103	38	379	104	4,286	22	7,808	12,599
8/ 4- 9	5 days	90	39	61	59	1,543	14	15,506	17,183
8/11-16	5 days	37	34	50	8	173	4	7,354	7,589
8/18-23	5 days	17	11	12	7	37	8	2,672	2,736
8/25-30	5 days	1	1			2		38	40
9/ 1- 6	5 days	3						78	78
Totals				773,207	80,803	214,235	263	37,799	1,106,307
Percent of District Catch				69.9	7.3	19.4	+	3.4	100.0

^{1/} The fishermen-industry price dispute severely affected the commercial harvest between June 20 and July 3.

^{2/} Igushik section only.

TABLE 9. Togiak district commercial catch by species and period, 1969.^{1/}

Period	Hours ^{2/}	Effort		Catch by Species					
		Drift	Set	Reds	Kings	Chums	Pinks	Cohos	Totals
6/16-21	5 days	43		170	1,992	24	3		2,189
6/23-28	5 days	62		5,088	6,623	1,201	102		13,014
6/30-7/5	5 days	77		33,952	6,301	5,748	549		46,550
7/ 7-12	5 days ^{3/}	94	2	28,503	3,886	8,828	412		41,629
7/14-19	5 days	58	3	40,959	954	15,133	223		57,269
7/21-26	5 days	65	2	17,298	342	15,449	76	152	33,317
7/28-8/2	5 days	57	1	6,540	62	6,773	29	33	13,437
8/ 4- 9	5 days	50		1,048	7	6,207		166	7,428
8/11-16	5 days	42		459	7	5,345	1	1,221	7,033
8/18-23	5 days	42		127		1,429	1	6,519	8,076
8/25-30	5 days	75	2	84	7	230		14,914	15,235
9/ 1- 6	5 days	44		24		22		5,715	5,761
Totals				134,252	20,181	66,389	1,396	28,720	250,938
Percent of District Catch				53.5	8.0	26.5	0.6	11.4	100.0

^{1/} Includes 5,057 Osviak fish; 1,226 reds, 46 kings, 3,688 chums and 97 pinks; and includes 4,670 Kulukak fish: 3,411 reds, 43 kings, 1,123 chums, 65 pinks and 28 cohos.

^{2/} Osviak and Kulukak sections were open 5 days-per-week, while the Togiak River section was open 4 days-per-week. The fishermen-industry price dispute did not affect the Togiak fishery.

^{3/} Togiak River section closed two additional days to assure adequate escapement.

TABLE 10. Summary of Bristol Bay commercial catch by district and species, 1969.^{1/}

District and River System	Catch by Species					Total
	Reds	Kings	Chums	Pinks	Cohos	
<u>NAKNEK-KVICHAK</u>						
Kvichak River	3,272,515					
Naknek River	1,140,493					
Alagnak River	242,064					
Total	4,655,072	19,016	42,535	205	17	4,716,845
<u>EGEGIK</u>	889,322	2,801	7,835	5	5,548	905,511
<u>UGASHIK</u>	169,845	2,107	1,995	1	9,292	183,240
<u>NUSHAGAK</u>						
Wood River	428,357					
Igushik River	117,527					
Snake River	0					
Nuyakuk River	189,436					
Nush.-Mul. Sys.	37,887					
Total	773,207	80,803	214,235	263	37,799	1,106,307
<u>TOGIAK</u>	134,252	20,181	66,389	1,396	28,720	250,938
TOTALS	6,621,698	124,908	332,989	1,870	81,376	7,162,841
SPECIES PERCENT	92.5	1.7	4.7	+	1.1	100.0

^{1/} Apportionment of the inshore red salmon catch by river system to the Naknek-Kvichak and Nushagak districts is preliminary.

TABLE 11. Bristol Bay commercial catch by district, type of gear and species, 1969

District	Type Gear	Catch and Percent by Species											
		Reds	%	Kings	%	Chums	%	Pinks	%	Cohos	%	Total	%
Naknek-Kvichak	Drift Set	4,249,624	91	15,857	83	35,257	83	119	58	-	-	4,300,857	91
		405,448	9	3,159	17	7,278	17	86	42	17	100	415,988	9
	TOTALS	4,655,072		19,016		42,535		205		17		4,716,845	
Egegik	Drift Set	713,493	80	2,171	78	5,262	67	1	20	370	7	721,297	80
		175,829	20	630	22	2,573	33	4	80	5,178	93	184,214	20
	TOTALS	889,322		2,801		7,835		5		5,548		905,511	
Ugashik	Drift Set	141,994	84	2,042	97	1,524	76	1	100	5,286	57	150,847	82
		27,851	16	65	3	471	24	-	-	4,006	43	32,393	18
	TOTALS	169,845		2,107		1,995		1		9,292		183,240	
Wushagak	Drift Set	606,719	78	79,429	98	208,213	97	66	25	26,812	71	921,239	83
		166,488	22	1,374	2	6,022	3	197	75	10,987	29	185,068	17
	TOTALS	773,207		80,803		214,235		263		37,799		1,106,307	
Togiak	Drift Set	132,700	99	20,132	100	65,721	99	1,387	99	28,361	99	248,301	99
		1,552	1	49	+	668	1	9	1	359	1	2,637	1
	TOTALS	134,252		20,181	1	66,389		1,396		28,720		250,938	
Total Bristol Bay	Drift Set	5,844,530	88	119,631	96	315,977	95	1,574	84	60,829	75	6,342,541	89
		777,168	22	5,277	4	17,012	5	296	16	20,547	25	820,300	11
	TOTALS	6,621,698		124,908		332,989		1,870		81,376		7,162,841	

TABLE 12. Bristol Bay salmon case pack and catch of fresh-frozen and cured fish by species and company, 1969.1/

Name of Company	Pack and catch by species					Totals
	Reds	Kings	Chums	Pinks	Cohos	
<u>CASE PACK2/</u>						
Alaska Packers Assn. (N/K)	87,839	448	1,105	0	0	89,392
Bering Sea Processors	11,999	510	628	0	12	13,149
Briggs-Way Co.3/	0	0	0	0	122	122
Bumble Bee Seafoods	51,111	508	990	0	0	52,609
Columbia-Wards Fisheries	32,444	2,937	4,614	0	129	40,124
Kayak Packing Co.	9,427	42	35	0	0	9,504
Kayler-Dahl Fish Co.	17,623	326	400	2	1	18,352
Nelbro Packing Co.	48,808	672	645	0	0	50,125
New England Fish Co. (N/K)	70,211	690	730	0	0	71,631
Pacific Alaska Fisheries	26,365	5,598	8,661	0	334	40,958
Peterson, W. A. Co.3/	9	0	18	0	210	237
Queen Fisheries	8,713	3,787	1,553	0	348	14,401
Red Salmon Co.	60,544	515	915	0	0	61,974
Togiak Fisheries	10,464	1,870	2,192	31	0	14,557
Totals	435,557	17,903	22,486	33	1,156	477,135
<u>FRESH-FROZEN AND CURED4/</u>						
Alaska Freshwater Fisheries	23,973	2,342	7,058	0	31,159	64,532
Alaskan Smokey Joe's3/	23,402	7,934	17,721	0	680	49,737
Blue C Fishing5/	4	3	290	0	575	872
Clark Fishing and Packing	378	9	2	0	0	389
Columbia-Wards Fisheries3/	280	35	1,124	35	11,516	12,990
Dignon Co.5/	0	2,782	0	0	0	2,782
Dunn's Seafoods Co.5/	0	250	0	0	0	250
Egegik Enterprises	0	480	0	0	0	480
Grindle Saltry5/	3,023	267	702	0	2,215	6,207
Gurtler Saltry	428	108	42	0	0	578
Jones, Mickie3/	45,306	1,999	738	0	0	48,043
Kayler-Dahl Fish Co.3/	3,809	12,587	164	0	1,232	17,792
K-J (York, John S.)3/	17,755	74	114	0	0	17,943
Mansmann, Frank5/	2	0	4	0	228	234
Pacific Alaska Fisheries3/	0	2,850	402	0	31	3,283
Peters, Wayne	15	73	0	0	0	88
Peterson, W. A. Co.5/	0	242	0	0	0	242
Togiak Fisheries3/	941	8,696	31,050	2	19,622	60,311
Totals	119,316	40,731	59,411	37	67,258	286,753

Name of Company	Pack and catch by species					Totals
	Reds	Kings	Chums	Pinks	Cohos	
<u>Summary:</u>						
Fresh Fish Totals	0	3,822	402	0	31	4,255
Frozen Fish Totals	66,870	17,442	1,016	0	1,232	86,560
Cured Fish Totals	52,446	19,467	57,993	37	65,995	195,938
Totals	119,316	40,731	59,411	37	67,258	286,753
Average Round Weight, lbs. <u>6/</u>	5.4	20.5	6.4	3.4	7.0	
Fresh-Frozen-Cured Production in Pounds <u>7/</u>	644,306	834,986	380,230	126	470,806	2,330,454

- 1/ Data extracted from Alaska Fishery Operators Annual Report, FG-122, unless otherwise noted.
- 2/ Case pack given in 48 1-lb. cans per case and includes only fish canned in Bristol Bay.
- 3/ Data extracted from Final Operations Report for Bristol Bay, BB-Cf/33.
- 4/ Fresh-frozen and cured given in numbers of fish and summarized by type of processing.
- 5/ Data extracted from processor's catch report.
- 6/ Data from A.D.F.G. records.
- 7/ Production in pounds derived by using over-all average round weight for 1969.

TABLE 13. Bristol Bay salmon egg production and estimated wholesale value of the finished product by fishing district, company and species, 1969.1/

Company	District2/	Pounds of Eggs by Species					Totals	Estimated Value of Finished Product
		Reds	Kings	Chums	Cohos	Totals		
Alaska Packers Assn.	Naknek-Kvichak	105,773	939	2,758	0	109,470	\$ 98,699.00	
Bering Sea Processors3/4/	Naknek-Kvichak	14,107	175	219	0	14,501	15,516.005/	
Bumble Bee Seafoods	Naknek-Kvichak	79,776	1,310	3,441	0	84,527	112,190.00	
Kayler-Dahl Fish Co.	Naknek-Kvichak	24,617	816	1,635	0	27,068	21,600.00	
Nelbro Packing Co.	Naknek-Kvichak	67,430	1,804	1,848	0	71,082	98,177.00	
New England Fish Co.	Naknek-Kvichak	126,230	2,084	69	0	128,383	83,456.00	
Red Salmon Co.	Naknek-Kvichak	113,055	1,377	3,260	0	117,692	146,475.00	
	Sub totals	530,988	8,505	13,230	0	552,723	\$576,113.00	
Kayak Packing Co.3/	Egegik	16,984	136	188	0	17,308	\$ 18,520.005/	
Alaska Freshwater Fisheries	Ugashik	0	0	0	2,790	2,790	\$ 2,985.005/	
Alaska Freshwater Fisheries	Nushagak	4,065	2,460	1,685	7,540	15,750	\$ 16,853.005/	
Alaska Smokey Joe's3/	Nushagak	3,687	7,861	4,030	0	15,578	16,668.005/	
Columbia-Wards Fisheries	Nushagak	68,050	8,595	18,714	301	95,660	93,315.00	
Kayler-Dahl Fish Co.3/	Nushagak	0	11,155	0	0	11,155	11,936.005/	
Pacific Alaska Fisheries	Nushagak	36,124	24,376	29,612	220	90,332	127,871.00	
Queen Fisheries4/	Nushagak	23,003	16,311	1,254	1,255	41,823	37,176.00	
	Sub-totals	134,929	70,758	55,295	9,316	270,298	\$303,819.00	
Alaska Freshwater Fisheries	Togiak	0	0	0	2,810	2,910	\$ 3,007.005/	
Alaska Smokey Joe's3/	Togiak	1,232	37	4,927	1,209	7,405	7,923.005/	
Togiak Fisheries	Togiak	23,892	12,848	24,772	9,240	70,752	75,705.005/	
	Sub-totals	25,124	12,885	29,699	13,259	80,967	\$ 86,635.00	
	GRAND TOTALS	708,025	92,284	98,412	25,365	924,086	\$988,072.00	

1/ Basic production data taken from FG - 122 "Alaska Fishery Operators Annual Report". Does not include egg production from fish processed outside of Bristol Bay.

2/ Indicates fishing district eggs processed in.

3/ Company did not file a final Annual Report on egg production, therefore, the preliminary egg production was used.

4/ Final report gave only total egg production with no breakdown by species. Final egg production by species was estimated using preliminary data applied to the final egg production.

5/ Value not reported. Estimated by A.D.F.G.

TABLE 14. Togiak district herring catch and kelp harvest in pounds by day, 1969.

Date	No. Deliveries	Catch in Pounds	
		Daily	Accumulative
		<u>Herring</u>	
May 15	8	11,005	11,005
16	4	6,607	17,612
19	8	22,451	40,063
20	5	4,483	44,546
21	2	19,480	64,026
22	1	23,250	87,276
23	4	2,843	90,119
24	6	3,721	93,840
25	2	641	94,481
Totals	40		94,481
		<u>Herring Roe-on-Kelp</u>	
Totals ^{1/}	20		10,125

^{1/} Daily harvest data not available.

TABLE 15. Bristol Bay fishery operators by district, 1969.1/

Name of Operator	Location	No. Lines	Comments
<u>NAKNEK-KVICHAK DISTRICT</u>			
Alaska Packers Association	South Naknek	4 - 1 lb. tall 1 - 1/2 lb.	Canned salmon
Bering Sea Processors	South Naknek	1 - 1 lb. tall 1 - 1/2 lb.	Canned salmon
Bumble Bee Seafoods	South Naknek	3 - 1 lb. tall 1 - 1/2 lb. 1 - 1/4 lb.	Canned salmon
David B. Williams	Naknek	None	Fresh salmon
Freezer K-J	Naknek	None	Frozen salmon
Kayler-Dahl Fish Co., Inc.	Naknek (M/V Homer)	1 - 1 lb. tall None	Canned salmon Frozen salmon
Mitsui & Co. (USA) Inc.	Naknek (Nelbro)	None	Salmon roe
Nelbro Packing Co.	Naknek	2 - 1 lb. tall 2 - 1/2 lb.	Canned salmon
New England Fish Co.	Nakeen (Peterson Point)	3 - 1 lb. tall 3 - 1 lb. tall	Operated as fish camp Canned salmon
Pacific Alaska Fisheries, Inc.	Naknek (Warren)	None	Operated as fish camp
Peter Pan Seafoods	Naknek	None	Operated as fish camp; fish transported to False Pass for canning
Toshoku, Ltd.	South Naknek (A.P.A.)	None	Salmon roe
Wards Cove Packing Co. Inc. (Red Salmon Co.)	Naknek	4 - 1 lb. tall	Canned salmon
Wayne Peters	Naknek	None	Salted and cured salmon
Western Alaska Enterprises	False Pass (Peter Pan Cannery)	None	Salmon roe

(continued)

TABLE 15. (continued)

Name of Operator	Location	No. Lines	Comments
<u>EGEGIK DISTRICT</u>			
Alaska Packers Association	Egegik	3 - 1 lb. tall	Operated as fish camp
Blue C Fishing (Augie Alto & Al Trott)	Coffee Pt.	None	Salted salmon
Bristol Bay Processors (E. H. Clark)	Coffee Pt.	None	Salted salmon
Columbia Wards Fisheries	N. Egegik	None	Operated as fish camp
Edward M. Clark	Coffee Pt.	None	Salted salmon
Egegik Enterprises	Egegik	None	Fresh salmon
Fred Grindle	Coffee Pt.	None	Salted salmon
Kayak Packing Co.	Big Creek	1 - 1 lb. tall	Canned salmon
Marubeni-Iida, Inc.	Egegik (M/V Kayak)	None	Salmon roe
New England Fish Co.	Egegik	1 - 1 lb. tall 1 - 1/2 lb.	Operated as fish camp
W.A. Peterson Co.	Egegik	1 - 1/2 lb.	Canned & fresh salmon
<u>UGASHIK DISTRICT</u>			
Alaska Packers Association	Pilot Point	None	Operated as fish camp
Alaska Freshwater Fisheries	Pilot Point	None	Cured salmon and roe
Briggs-Way Co.	Ugashik	1/2 lb. jars	Canned salmon
Frank Mausmann	Ugashik	None	Salted salmon
Mickie Jones	Ugashik (M/V Polar Bear) (M/V Brown Bear) (M/V Kernel Korn)	None	Frozen and salted salmon

(continued)

TABLE 15. (continued)

Name of Operator	Location	No. Lines	Comments
<u>NUSHAGAK DISTRICT</u>			
Alaska Packers Association	Clarks Point	None	Operated as fish camp
Alaskan Smokey Joes, Inc.	Nushagak Bay (M/V Diver 1)	None	Fresh and cured salmon Salmon roe
Alaska Freshwater Fisheries	Dillingham (M/V Babs)	None	Fresh and cured salmon Salmon roe
Columbia Wards Fisheries	Ekuk	3 - 1 lb. tall 1 - 1/2 lb.	Canned and cured salmon
Dignon Company, Inc.	Nushagak Bay (M/V Cape Douglas)	None	Frozen salmon
Dunn's Seafoods Co., Inc.	Dillingham	None	Fresh salmon
Gurtler, R. E.	Dillingham	None	Salted salmon
Kayler-Dahl Fish Co., Inc.	Nushagak Bay (M/V's Homer and Nuisance II)	None	Frozen salmon and roe
Mitsui and Co., Inc.	Ekuk (C.W.F. & Queen)	None	Salmon roe
New England Fish Co.	Dillingham	None	Operated as fish camp
Pacific Alaska Fisheries, Inc.	Dillingham	2 - 1 lb. tall 1 - 1/2 lb.	Canned and fresh salmon
Queen Fisheries, Inc.	Combine Slough	1 - 1 lb. tall 1 - 1/2 lb. 1 - 1/4 lb.	Canned salmon
Western Alaska Enterprises, Inc.	Dillingham (P.A.F.)	None	Salmon roe

(continued)

TABLE 15. (continued)

Name of Operator	Location	No. Lines	Comments	
<u>TOGIAK DISTRICT</u>				
Alaskan Smokey Joe's, Inc.	Togiak (M/V Diver I)	None	Cured and fresh salmon Herring and salmon roe	
Alaska Freshwater Fisheries	Togiak	None	Cured salmon and roe	
Arctic Roe	Togiak	None	Herring roe and herring roe on kelp	
Marubeni-Iida, Inc.	Togiak (Togiak Fisheries)	None	Salmon roe	
Togiak Fisheries, Inc.	Togiak	1 - 1/2 lb. 1 - 1/4 lb.	Canned, salted and frozen salmon	
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		<u>1 lb.</u>	<u>1/2 lb.</u>	<u>1/4 lb.</u>
	Total available lines	32	13	3
	Total operating lines	25	12	3

1/ Indicates only operators with a physical plant or processing facility in a district. Most non-operating canneries are utilized as fishing bases, and several more companies may be represented with fishing effort in districts than indicated.