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KODIAK AREA SALMON MANAGEMENT

REPORT TO THE BOARD OF FISHERIES

By:

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KODIAK MANAGEMENT AREA SALMON FISHERY

MANAGEMENT AREA DESCRIPTION

Boundaries

The Kodiak Management Area comprises the entire Kodiak archipelago and that portion of the Alaska Peninsula which drains into Shelikof Strait between Cape Douglas and Kilokak Rocks at Imuya Bay. The archipelago is approximately 200 miles long, extending from Shuyak Island south to the Trinity Islands. The Alaska Peninsula portion is about 300+ miles long and is separated from the archipelago by the Shelikof Strait which averages 45+ miles in width (Figure 1, page 14).

Management Units

Kodiak salmon management is structured around seven districts subdivided into 52 sections (Figure 2, page 15). These management units are occasionally further subdivided in-season by emergency order to adjust fishing effort on unexpected salmon surpluses or deficits. Each management unit defines a traditional geographical harvest unit managed for specific in-unit stocks and/or traditional fishing patterns associated with these units.

Production Potential

Of the 386 salmon streams in the Kodiak Area, 36 support sockeye populations of varying size, four support viable chinook populations, approximately 174 support coho populations, approximately 150 have productive chum populations, and all of the streams have pink populations. These salmon streams are distributed as follows throughout the area: 74 occur in the Alaska Peninsula portion (Mainland District), and the remaining 312 occur in the archipelago; the number of streams by Island group places 211 on Kodiak Island, 71 on Afognak Island, 18 on Shuyak Island, and 12 on the Trinity Island group (Figure 3, page 16).

The long term average salmon production potential for the Kodiak Management Area is shown in Table 1 on page 18; this assumes that desired indexed escapement levels are achieved for each species and for each significant production system. It also assumes an average return per spawner which is reasonably comparable to historical averages. As depicted in Table 1, the long term average harvest potential can be compared to historical harvest levels, either long term or short term, to evaluate existing management programs.

HISTORICAL PERSPECTIVE

Gear

The earliest documented commercial salmon gear were the cannery-owned large, heavily manned beach seine operations that fished near the terminus of Karluk River. This evolved into a period dominated by cannery-owned traps combined with fishermen owned set-gillnet, purse seine, and beach seine operations and then to a post-statehood situation dominated by purse seine, set-gillnet, and beach seine gear in descending order of abundance. With the inception of limited entry in 1974, the post-statehood relationship between gear abundance was permanently established.

The geographical areas currently open to specific gear types have remained unchanged since 1974 except for three situations. In the mid 1970's, in an attempt to accelerate the rebuilding of Karluk stocks, the area between Rocky Point and Cape Uyak in the Karluk District was closed to set gillnetting. No documented gillnetting had occurred in that area since the early 1960's so no existing gillnet sites were affected. More importantly, several prime seining locations which greatly impacted Karluk stocks were made manageable, i.e. a critical area could be kept closed to provide a maximum build-up area for the severely depleted Karluk sockeye and pink stocks. A second gear/area adjustment occurred in the late 1970's in the Alitak District. The common boundary between the Cape Alitak Section, the Moser/Olga Bay section and the Portage-Deadman Section was adjusted to stabilize an unclear boundary description and increasing gear conflicts. The area open to set gillnetting was reduced from Cape Alitak to its current location on Tanner Head and was increased from a point north of Fox Island east to its current location. The final gear/area adjustment was made in Zachar Bay where, in order to alleviate fixed and mobile gear conflicts at the north "marker-set", the closed water sanctuary markers were reduced to their current locations and the new "open-area" was made an exclusive seine area. This was consistent with the exclusive seine areas adjacent to the closed water boundaries in other major westside bays open to both gear types.

Processing

Commercial salmon processing in the Kodiak area has evolved from small salting/pickling operations, to almost exclusively canning, to the current heavy divergence into frozen whole products which supplement canned salmon, the main processed product. In recent years, Kodiak processors have probed into frozen fillets, frozen minced, unfrozen fresh, and salmon surimi. The physical and operational nature of Kodiak processing plants has evolved from scattered seasonally-operated canning operations to today's

highly efficient, multi-tasked, shorebased plants congregated within Kodiak's city limits. The current year round fisheries supporting these plants have provided advanced processing technology that has yielded diverse high quality salmon products in recent years.

Currently there are 16 operational shorebased processing plants in the Kodiak Management Area. Of these, 11 are within Kodiak city limits and 9 of these commonly process salmon. The remaining 5 outlying plants also process salmon. Thus, there currently is a total of 14 shorebased salmon processing plants within the Kodiak Management Area capable of processing salmon. Additionally, one Chignik shorebased processing plant regularly processes Kodiak caught salmon, as does one Cook Inlet shorebased processing plant.

Estimated sustained processing capacity of Kodiak shorebased salmon processors for the 1989 season was approximately 1,100,000 salmon per day; this includes both canned and frozen processing. If the two Kodiak shorebased plants which do not commonly process salmon opted to do so, it is estimated that the aforementioned capacity could expand to 1,200,000 salmon per day. Floating processors are not common to the Kodiak Area. Only on large even-year pink salmon returns when fishing time is expected to be abundant and thus a steady supply of fish assured, have floating processors operated in the Kodiak Area. While three floating salmon processor did operate in Kodiak during the 1988 season for a very short period, none registered to operate in the Kodiak Area in 1989.

Management

The Kodiak Management Area salmon staff is comprised of an Area Management Biologist (F.B. III), an Assistant Area Management Biologist (F.B. II), approximately 15 seasonal employees (F.B. I's and F.T. III's) and a seasonal Boat Officer. The Kodiak salmon research staff includes an Area Research Biologist (F.B. II) and approximately four seasonal employees. A Regional Management Coordinator (F.B., IV) and a Regional Research Biologist (F.B. III) oversee each of the operations.

Basic in-season management activities center around daily evaluations of actual run strength in comparison to pre-season expectations by species. The aforementioned management staff's in-season duties include frequent (several times daily) contact with all buyers to collect updated harvest data by area and species and with as many fishermen as possible to collect their insights into run strength and distribution as well as comments on prevailing in-season management activities. Additional activities include the collection of escapement data from the sixteen various fish-weirs (twice daily) and from numerous aerial

observations of fish "build-ups" and actual escapements into management "index systems". Additional in-season information on returning stock strength is obtained from an ADF&G sockeye test fishery in the Alitak District.

STOCK STATUS

Chinook: The Kodiak Area has two natural occurring chinook salmon populations and two introduced populations. The former are major systems (Karluk and Ayakulik) where annual escapements are monitored by fish weirs; the latter are lesser populations whose escapement is monitored by either fish weir (Fraser) or aerial survey (Pasagshak). There are no directed commercial fisheries on these stocks. Any harvest is incidental to directed fishing time on sockeye and pink salmon. A moderate sportfishery occurs on Karluk and Ayakulik stocks; a large portion of this effort is commercial sportfishing effort. The considerable smaller Fraser population is lightly exploited by recreational and commercial sportfishermen, and the Pasagshak population, smallest of the four, has been protected from all directed sportfishing and incidental commercial fishing to allow a viable spawning population to become established. Current stock status assessment by both ADF&G and U.S.F.W.S. (Kodiak National Wildlife Refuge) for the three large systems is that they are healthy, i.e. escapement requirements are being achieved and that the existing regulatory structure for subsistence, sport and commercial fishing adequately protects these stocks at current levels of exploitation. The success of the Pasagshak "introduction" remains uncertain, however recent trends in escapement are favorable.

Sockeye: Of the 36 known sockeye populations in the Kodiak Area, four are considered to be major (**Karluk, Ayakulik, Upper Station**, and **Fraser** in descending order of potential production) and nine are considered to be significant minor populations (Litnik, Uganik, Saltery, Kaflia, Pauls, Swikshak, Little, Thorsheim, and Portage in descending order of potential production). The remaining 23 systems are comparatively minor systems and normally are not exploited by directed commercial effort.

The four major systems generally provide **as much as 90 percent** of Kodiak's current sockeye production. Directed fisheries on these stocks are intense and require extensive management activities from June 9 through September 15. Two of these systems (Karluk and Upper Station) have distinct manageable early and late runs **(early: June 9 - July 15; late: July 16 - September 15)** while the other two are primarily early runs. All stocks from these four major systems are considered reasonably healthy. Combined maximum production from these stocks has not yet been realized

and possibly will not be until the early 1990's. At that time annual harvests from these four major systems should equal approximately 1.9 times the current total harvest for the entire area (Table 1, page 18). The rebuilding efforts on these stocks began in 1970 and only recently have the initial benefits of these efforts been evident. These systems should remain relatively stable and productive providing existing "fish-weir" programs and management strategies are not adversely affected.

The nine significant minor systems annually account for approximately five percent of Kodiak's current sockeye production. Some of these systems are monitored via fish weirs (Litnik, Saltery, Pauls, Thorsheim) and the remainder by aerial survey. Information on the former, being more timely and precise, yields the best opportunity for stock management while management of the latter stocks is more precarious. Of these nine systems, five are considered to be moderately healthy and the remaining four marginally healthy based upon 1988 production. A more conservative management approach for all nine systems will prevail in upcoming years. Also, it is expected that several enhancement and rehabilitation projects currently being considered could reverse current negative production trends for some of these stocks. Because these populations can offer a relatively high yield per unit effort by a very efficient, directed commercial seine effort and because they generally don't receive the degree of biological protection afforded larger sockeye populations, these populations remain the most vulnerable to over-exploitation. Current subsistence and sportfishing effort on all of these stocks have not been adversely affected by existing regulations or management strategies. However, the relatively small, fragile populations of some minor commercially insignificant systems which are experiencing rapidly increasing subsistence harvests (Buskin and Barabara systems) may be approaching maximum exploitation. Sportfishing for sockeye on these same systems is currently minimal. These systems will require close monitoring in the future to ensure biological protection and that future subsistence uses will not be jeopardized.

<u>Coho</u>: This species has in recent years received the greatest increase in exploitation of any salmon species in the Kodiak Area. All user groups have a keen interest in this species and the resultant allocation problems have been compounded by Kodiak's coho data base shortcomings. As indicated earlier, approximately 174 systems support coho populations, however approximately 20 percent of these populations generate 80 percent of the area's production. The nature of these major systems (most are lake systems, several of which have fish weirs) almost ensures that minimum escapements will be achieved if knowledgeable in-season management strategies prevail. The greatest concern is for the remaining 80 percent of the streams

whose populations are relatively very small and subject to over exploitation. This occurs when the advantage of local knowledge by either of the three user groups exceeds the ability to monitor and/or manage in-season exploitation. The rather precarious status of these stocks will not improve unless a concentrated regulatory and management effort is implemented to safeguard broodstock. Again, this concern applies to all users of these stocks.

Pinks: Current Kodiak Area pink salmon natural production is relatively stable at an above average level and should remain so, provided existing management strategies and in-season management activities are retained and extreme environmentally-induced fluctuations don't prevail. The historical data bases on harvest and escapement are fairly extensive and current management personnel are intimately familiar with approximately 20 years of Kodiak pink salmon production and management. Pre-season forecasts are very reliable in projecting extremes for total area production and for major production systems. Forecast precision is reliably adequate to ensure that ADF&G management goals (adequate escapement and orderly fishing opportunities on quality fish) and industry goals (maximum cost efficient production) are commonly attained. Because pink salmon represent the base of Kodiak salmon production (averaging 80 percent of total area harvest) and because of the aforementioned stability associated with management of this species, the long term status of this species is projected to be excellent.

Chums: Increasing emphasis on chum management over the past 10 years has substantially increased not only production, but the data base necessary to insure that current management will be continued and improved upon. Increases in directed fishing on specific chum stocks and the special difficulties associated with evaluating in-season run strength and timing for these stocks has required that intensive chum stock management strategies be developed.

Currently chum escapement requirements and the use of in-season "build-up" and escapement data are being reevaluated. Both historical and in-season harvest data and industry input are also being reevaluated. Because of the similarities between pink and chum salmon freshwater and early-marine portions of their life cycle, because of our understanding and annual evaluation of pink salmon survival (pre-emergent fry program), and because of our ability to take advantage of the multi-age class nature of annual chum returns to develop harvest projections (through catch sampling) the future status of this species is expected to be excellent.

1989 SALMON SEASON SUMMARY

General

The 1989 Kodiak Area commercial salmon fishery was severely impacted by the March 24 "Exxon Valdez" oil spill in Prince William Sound. Oil-contaminated waters were widespread throughout the Kodiak Area to the point that commercial fishing activity occurred in only three geographically isolated locations, two of which provided for modified commercial fishing on natural stocks and one of which provided for a modified cost-recovery fishery on hatchery stocks

Gear participation in these three "fisheries" was abnormal. One of the fisheries occurred in the exclusive set-gillnet area of the Alitak District and only 46% of Kodiak's fishable gillnet permits participated in this fishery. The other fishery occurred extremely late in the season in a portion of the Inner Karluk Section, an exclusive seine area, and was very restricted on time and area available for fishing, consequently only 1% of the fishable seine permits participated in this fishery. The third fishery occurred in a small terminal portion of the Kitoi Bay Section near the Kitoi Bay Hatchery and it occurred as a supplemental cost-recovery fishery and participating vessels were chosen from a predetermined list; this fishery was administered by the Kodiak Regional Aquaculture Association.

A preliminary comparison between the 1989 pre-season total harvest projection versus the post-season total harvest projection by species is identified in Table 2 on page 19. Because of the on-going "claims" activities between Exxon and fishermen, etc., this table identifies natural and hatchery Kodiak production, and non-local production. It further identifies, in footnote 5/ the projected total natural Kodiak harvest which would have occurred under normal fishing conditions and in footnote 7/ the supplemental hatchery harvest which would have been taken by a common property fishery also under normal fishing conditions. The figures in footnote 4/ represent "lost harvest" from Kodiak natural stocks as a result of oil-contaminated waters preventing normal fisheries in the Kodiak Area in 1989.

A fixed ex-vessel value of Kodiak's 1989 commercial salmon fishery cannot be provided until final settlements between permit holders and Exxon occur. However, a very preliminary estimate of that value can be made by applying average prices paid for actual normal production to projected natural production and by adding in the actual value of the excess cost-recovery hatchery fish. This would yield an approximate total ex-vessel value for natural and hatchery production combined of 54.1 million dollars, the second highest on record (Table 4, page 22). Using 1988 gear levels and assuming a 1989 harvest by gear proportional to 1988,

the average ex-vessel value by gear type would be: Purse seiners $130,000, beach seiners $30,000 and set gillnetters $100,000. Again, these figures are very approximate and only provide an estimated comparison between 1989 and prior years' ex-vessel values (Table 5 and 6, pages 23 and 24).

The 1989 actual escapement was obviously tremendous, especially for pink salmon. The eventual impact of these escapements on future returns is not certain, however returns-per-spawner, especially for pink salmon should be at or near record low levels. A summary of the estimated total escapement versus the projected total escapement which would have occurred under normal fishing conditions is shown below:

1989 Kodiak Estimated Total Escapement Comparisons (Millions of Fish)

	Kings	Reds	Coho	Pinks	Chums	Total
Actual	0.026	3.169	0.318	19.998	1.813	25.324
Projected	0.021	1.935	0.179	3.970	0.998	7.082

In summary, the 1989 commercial salmon fishery under normal conditions would have yielded a record harvest from both natural and hatchery production, all species combined (Table 2, page 19). Pre-season harvest projections would have been reasonably accurate except for pink salmon whose overall abundance in 1989 was over two-fold pre-season expectations. Since this species is the "bread and butter" species for Kodiak's fishing fleet, all participants would have experienced near-record fishing opportunities (fishing time and areas open to fishing) and subsequently a very successful season.

Industry

The massive area-wide closure due to the Exxon Valdez oil spill provided only limited fishing opportunities for most permit holders and yielded processing activities substantially below pre-season expectations. As mentioned earlier, only two commercial fisheries occurred on natural stocks while a modified cost-recovery fishery occurred on hatchery pink stocks. A brief overview of each of these fisheries is described below and further summarized in Table 3 on page 21:

The Alitak fishery was only able to occur in the exclusive set gillnetting section of this district. This fishery was of relatively long duration, occurring over a 77 day time frame extending from June 16 through August 31. A total of 56.5 days of fishing time was available within that 77 day period. Only two total closures occurred; one for 8-1/2 days from July 18-26

and another for 12 days from August 19-31 (Figure 4 page 17). Of the 186 potential fishable set gillnet permits in the Kodiak Area, 87 (46%) participated in the 1989 Alitak District commercial salmon fishery. This fishery occurred on surplus sockeye salmon returning to the Fraser (early), Upper Station (early and late), and Akalura systems, and on surplus pink salmon returning to the Dog Salmon River system. A harvest summary by stock by management unit, as preliminarily identified, is shown in Table 7 on page 25. The 1989 sockeye harvest in this district represents the largest sockeye harvest in the 99 year history of commercial fishing in this district.

The Karluk fishery only occurred in two six-hour fishing periods which extended over a two day period, September 16-17. It was only able to occur in the closed water portion of the Inner Karluk section and the lower two thirds of Karluk Lagoon. This is an area exclusive to purse seine and beach seine fishing and because of the late timing and expected low yield on surplus Karluk sockeye and coho only 4 units of seine gear made landings; 3 purse seiners (1% of the 387 potentially fishable purse seine permits) and 1 beach seine (3% of the 33 potential fishable beach seine permits). The late timing of this fishery coincided with a period of time when oil-free waters were identified along with a harvestable surplus of Karluk system sockeye.

The Kitoi Bay fishery differed from the other two aforementioned fisheries in that it was administered jointly by the Kodiak Regional Aquaculture Association and ADF&G Kitoi Bay hatchery personnel. This fishery was not a competitive-type fishery, it was a fishery designed to harvest high quality hatchery pink salmon which were surplus to the hatchery needs for brood stock and for normal cost-recovery to cover hatchery operational costs. The pinks harvested in this non-competitive fishery would normally have been taken in the common property fisheries adjacent to the Kitoi Bay hatchery. The presence of oil-contaminated waters in the normal common property fishing locations allowed these excess fish to return to their "stream or origin", the Kitoi Bay hatchery. The inner portion of Kitoi Bay proper had been laced with oil-contaminant booms in order to protect hatchery rearing facilities for pink and chum salmon fry. The resultant clean waters of inner Kitoi Bay allowed the harvest of approximately 6.4 million surplus hatchery pink salmon. A relatively quick and orderly harvest of this volume of pinks was accomplished by allowing only a limited number of catcher-boats (purse seiners) and tenders to pass through the contaminant booms under tightly controlled conditions in order to keep the harvest locations oil-free. From a predetermined vessel list, approximately 30 different seiners harvested the 6.4 million pinks over a 26 day period extending from August 1 through August 25. Processors from Kodiak and Cook Inlet were allowed to provide daily bids for "groups" of fish. For a first-time harvest scenario of this type, the end result was that instead of

6.4 million "wasted" pink salmon, approximately 10.6 million dollars in revenue was generated; an amount which is currently being held in escrow pending final disposition of "claims" action. This harvest of 6.4 million pinks represents a record pink salmon return to the Kitoi hatchery; this harvest was three times the pre-season projection.

ADF&G

Implementing a harvest strategy for 1989 was an exercise in extreme frustration. As already discussed, the extent of oil-contaminated waters throughout the Kodiak Management Area was widespread; only the three "fisheries" previously discussed were able to occur. Guiding the in-season harvest strategy in 1989 were two documents: 1) a "Memorandum of Understanding" (M.O.U.) between ADF&G and ADEC which identified the criteria for conducting commercial salmon fisheries where the presence of oil-contaminated waters were potentially present. 2) An emergency regulation issued by the Commissioner of Fish and Game suspending all regulatory management plans in order to provide for potentially abnormal harvest scenarios which would be needed to harvest actual surplus salmon. Because of the potentially abnormal fishing conditions and because of the need to keep the industry (fishermen and processors) completely informed as to the harvest requirements dictated by the M.O.U., numerous public meetings were held throughout the season (approximately 3-1/2 months). In conjunction with this, approximately 30 news releases were issued identifying both the aforementioned meetings as well as actual fishing time for the Alitak and Karluk fisheries. Even with this severely restricted 1989 fishing season, management of the Alitak District sockeye stocks required 22 field announcements (emergency orders); the Karluk fishery required only one.

A major problem in 1989 was to provide a potential chronology of potential fishing scenarios for industry as the season progressed. As shown in Figure 5 on page 27, a management chronology for targeted management identifies a time sequence for potential fishing opportunities by species; a normal harvest timing scenario is shown in Figure 6 on page 28. From these figures, it was apparent that salvaging a "normal" season from the conditions which were developing in-season, i.e. the gradual spread of oil-contaminated waters throughout the entire management area, meant that widespread fishing would have to occur by late July, at the latest. Any fishing time after that would have been most certainly abnormal in terms of significant changes in harvest allocations; the June and July sockeye fisheries had already yielded a complete reallocation of the harvest. Coupled with the fishery timing considerations were the allocative considerations between various seine operations,

between Westside set-gillnet operations, and between seiners and gillnetters.
As daily updates on the extent of oil-contamination were provided to industry and as weekly "where we are now" informational meetings were held, many individual industry decisions were made to salvage a salmon season. A key component of their decision making was that a predictable and adequate advance notice time for potential Kodiak fishing time be provided by ADF&G. An initial seven day advance notice procedure was implemental during the worst periods of oil-contamination and then as hopeful signs of potential fishing opportunities began to appear the advance notice period was reduced to 96 hours. However, by season's end, i.e. when salmon were no longer commercially acceptable, the 96 hour advance notice was still in effect.

An extremely intensive ADF&G effort at evaluating fishable waters and beaches prevailed for the entire season. Initially implemented during the herring sac-roe fishery through the use of two Exxon chartered commercial seine vessels, this program was expanded to the point that during the peak assessment period eight Exxon chartered seiners, each with a certified ADF&G observer, were test fishing the entire traditional fishing grounds of the Kodiak Management Area to try and identify fishable conditions which would not violate the requirements of the M.O.U. between ADF&G and ADEC. At the same time two fully staffed ADF&G helicopters, chartered by Exxon, were daily conducting beach assessment surveys. This intense monitoring schedule was sustained over an approximate 3-1/2 month period. No fishable situations were identified during that entire time period other than the three fisheries discussed earlier in this report. Several times, geographically isolated fisheries were close to occurring. In fact, advance notice was given on at least two occasions for industry to prepare to fish. However, because of oil-related observations by either test-vessels and/or helicopter beach crews, per interpretation of the M.O.U. requirements, these potential fisheries were postponed.

The problems that industry had in dealing with idle equipment and crew (both fishing and tender vessel crews and processing crews) during an approximate three month period, also aggravated the frustrations by ADF&G in implementing the M.O.U. requirements.

In summary, based upon the extensive nature of the oil-contaminated waters and beaches in 1989 as monitored by extensive ADF&G effort, and in consideration of the M.O.U. requirements and their interpretation, all possible fishing scenarios were thoroughly explored in 1989 with the end result being that only the three fisheries previously mentioned were allowed to occur.

1990 SALMON HARVEST PROJECTIONS

As identified in Table 10 on page 30, the 1990 salmon return to the Kodiak Area is expected to be very good. The projected sockeye harvest of 2.3 million reflects good production from the three major systems of Karluk, Ayakulik, and Upper Station while the fourth major system, Fraser, is expected to yield only fair production at best. The remaining production from minor systems is expected to be about average. Projected harvests on non-local stocks are basically "guesses" at this point. Formal forecasts for all areas will not be completed until later in the winter and fixed adjustments to the numbers shown here should be available sometime after the first of the year.

The projected pink salmon harvest by geographical area identified in Table 10, page 30, represents a final perspective of how ADF&G perceives the 1990 pink salmon harvest will be distributed. Major differences from the actual distribution of the return experienced in 1989 should occur in the Alitak District where a below average pink harvested is projected and in the Afognak District's natural production where an above average and possibly near record return could occur.

The projected chum and coho projected harvests reflect lower expectations that those for 1989 and suggest harvests similar to the projected harvest for 1989. Projecting a geographical harvest for these two species relates relative proportional production between the geographical areas identified is expected to be reasonably accurate.

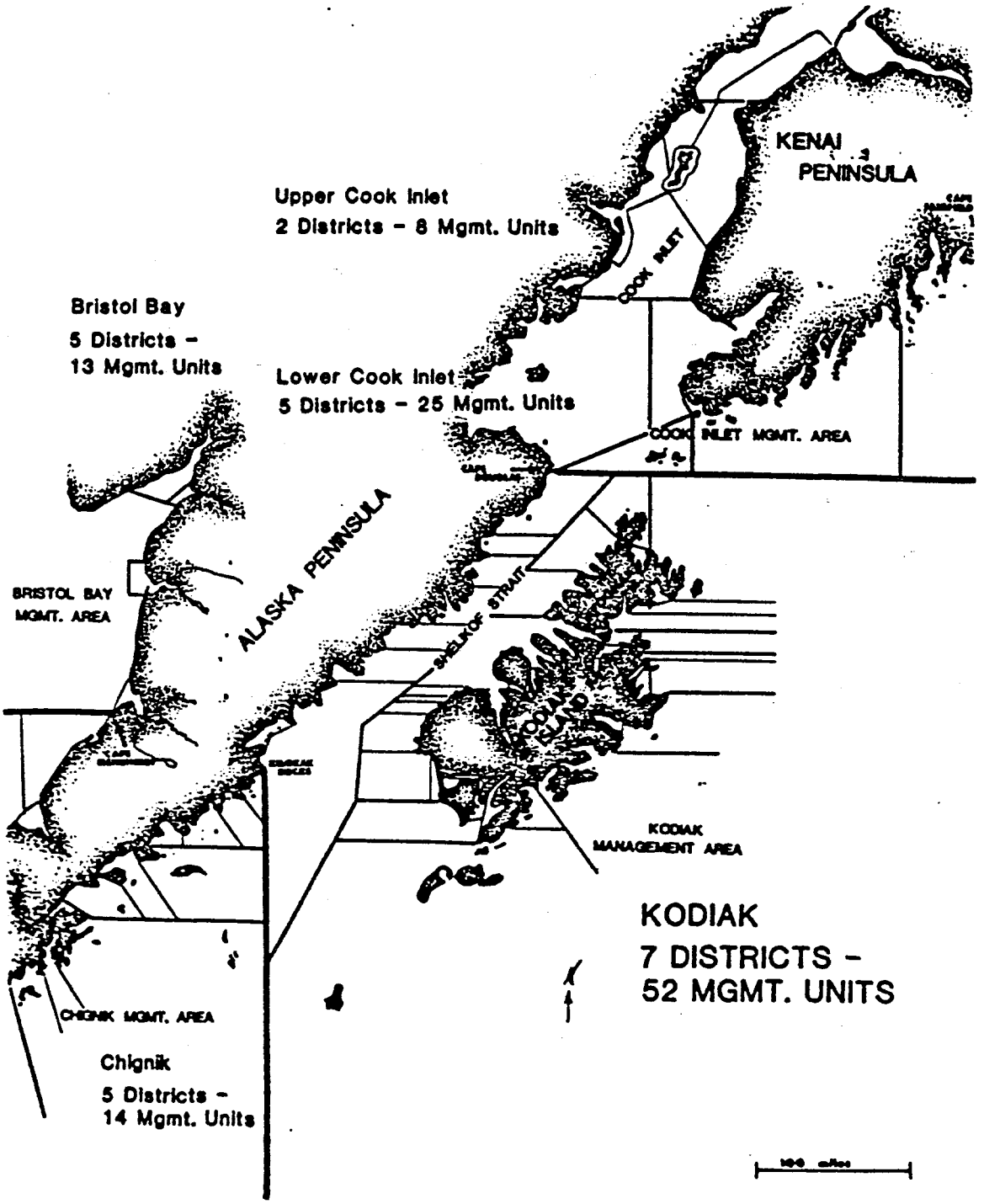
1990 ISSUES AND PLANS

A major concern for both industry and ADF&G is if the effects of the March 24, 1989 oil spill, which severely impacted Kodiak's 1989 commercial salmon fishery, will be present for the 1990 season. Recent information (11/15/89) from ADF&G staff on oil-projects and from village reports (Ouzinkie village) is that "mousse" from this spill is still evident in several locations on Kodiak Island's north end and westside and in the middle Mainland District. Hopefully the major storm activity commonly seen over the next three months will take it's toll on any residual pockets of "mousse" which could impact the 1990 commercial salmon fishery. Kodiak's herring sac-roe fishery which begins on April 15 will provide critical insight as to the status of fishable waters in the Kodiak Management Area, as will pre-fishery oil-assessment activities.

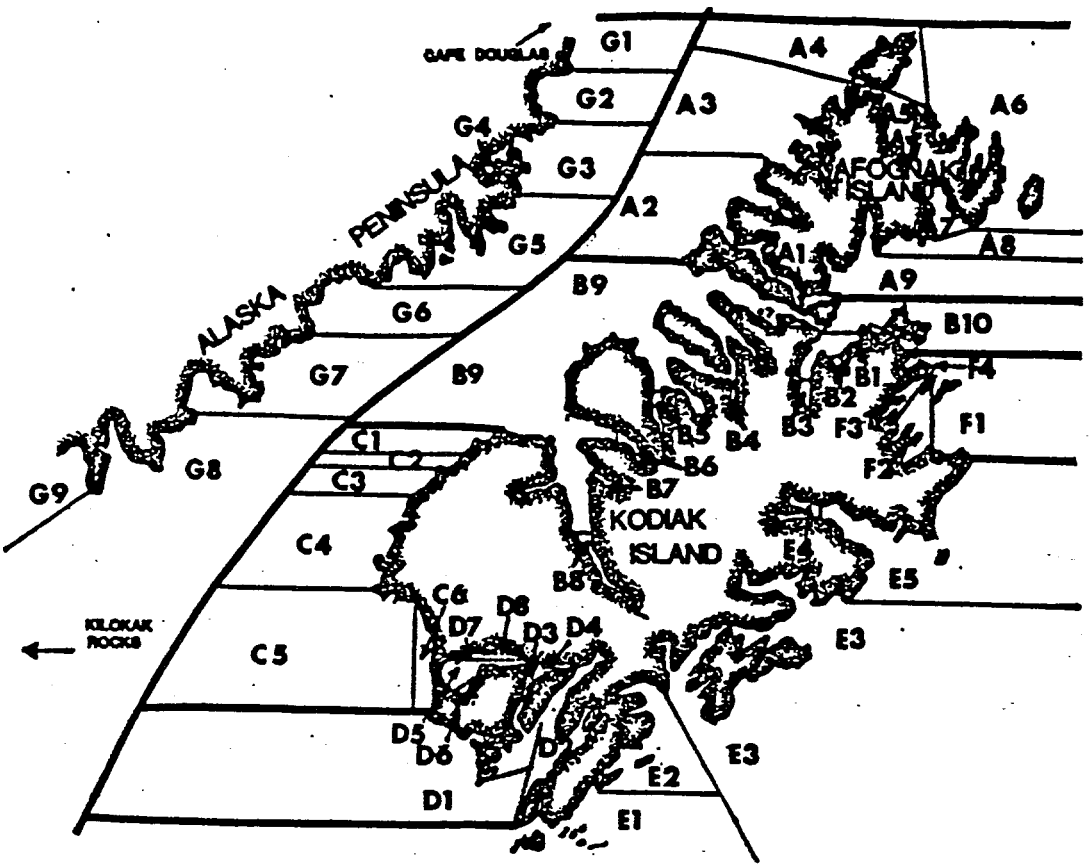
Other issues could stem from the results of the November 1989 Board of Fisheries deliberations in Kodiak. Regulatory changes stemming from Board action on four regulatory management plans for the Kodiak Area could yield changes in normal fishing opportunities for each of the gear types.

If the 1990 salmon return approaches the forecasted level, there should be ample fishing opportunities for all user groups consistent with years of comparable returns. If there are no negative lingering effects from the 1989 oil spill on Kodiak's fishable waters and a normal pre-season harvest strategy can be developed which maximizes fishing and processing activity on the actual 1990 salmon return, the season should be mostly uneventful and most likely greatly satisfying to an industry which went through the frustrations of the 1989 oil-impacted season.

KODIAK MANAGEMENT AREA
Comparisons to Adjacent Management Areas
Locations, Boundaries, Management Units



KODIAK MANAGEMENT AREA
Regulatory Districts and Sections
(Management Units)



KODIAK MANAGEMENT AREA DISTRICTS/SECTIONS

A. AFOGNAK DISTRICT

A1 RASPBERRY STRAITS S.
A2 SOUTHWEST AFOG. S.
A3 NORTHWEST AFOG. S.
A4 SHUYAK IS. S.
A5 PERENOSA BAY S.
A6 NORTHEAST AFOG. S.
A7 IZHUT BAY S.
A8 KITOI BAY S.
A9 DUCK BAY S.

B. NORTHWEST KODIAK D.

B1 ANTON LARSON BAY S.
B2 SHERATIN BAY S.
B3 KIZHUYAK BAY S.
B4 TERROR BAY S.
B5 N. UGANIK BAY S.
B6 SPIRIDON BAY S.
B7 ZACHAR BAY S.
B8 UYAK BAY S.
B9 CENTRAL S.
B10 NORTH CAPE S.

C. SOUTHWEST KODIAK D.

C1 OUT. KARLUK S.
C2 IN. KARLUK S.
C3 STURGEON S.
C4 HALIBUT BAY S.
C5 OUT. AYAKULIK S.
C6 IN. AYAKULIK S.

D. ALITAK BAY D.

D1 C. ALITAK S.
D2 HUMPY-DEAD. S.
D3 MOSER-OLGA S.
D4 DOG SAL. FLATS S.
D5 OUT. UP. STAT. S.
D6 IN. UP. STAT. S.
D7 OUT. AKALURA S.
D8 IN. AKALURA S.

E. EASTSIDE KODIAK D.

E1 7-RIVERS S.
E2 3-HEADED S.
E3 SITKALIDAK S.
E4 IN. UGAK BAY S.
E5 OUT. UGAK S.

F. NORTHEAST KODIAK D.

F1 OUT. CHINIAK S. S.
F2 IN. CHINIAK S. S.
F3 BUSKIN RIVER S.
F4 MONASHKA/MILL S. S.

G. MAINLAND DISTRICT

G1 BIG RIVER S.
G2 HALLO BAY S.
G3 OUT. KIUKAK S.
G4 IN. KIUKAK S.
G5 DAKAVAK S.
G6 KATMAI S.
G7 ALINCHAK S.
G8 CAPE KOVAK S.
G9 WIDE BAY S.

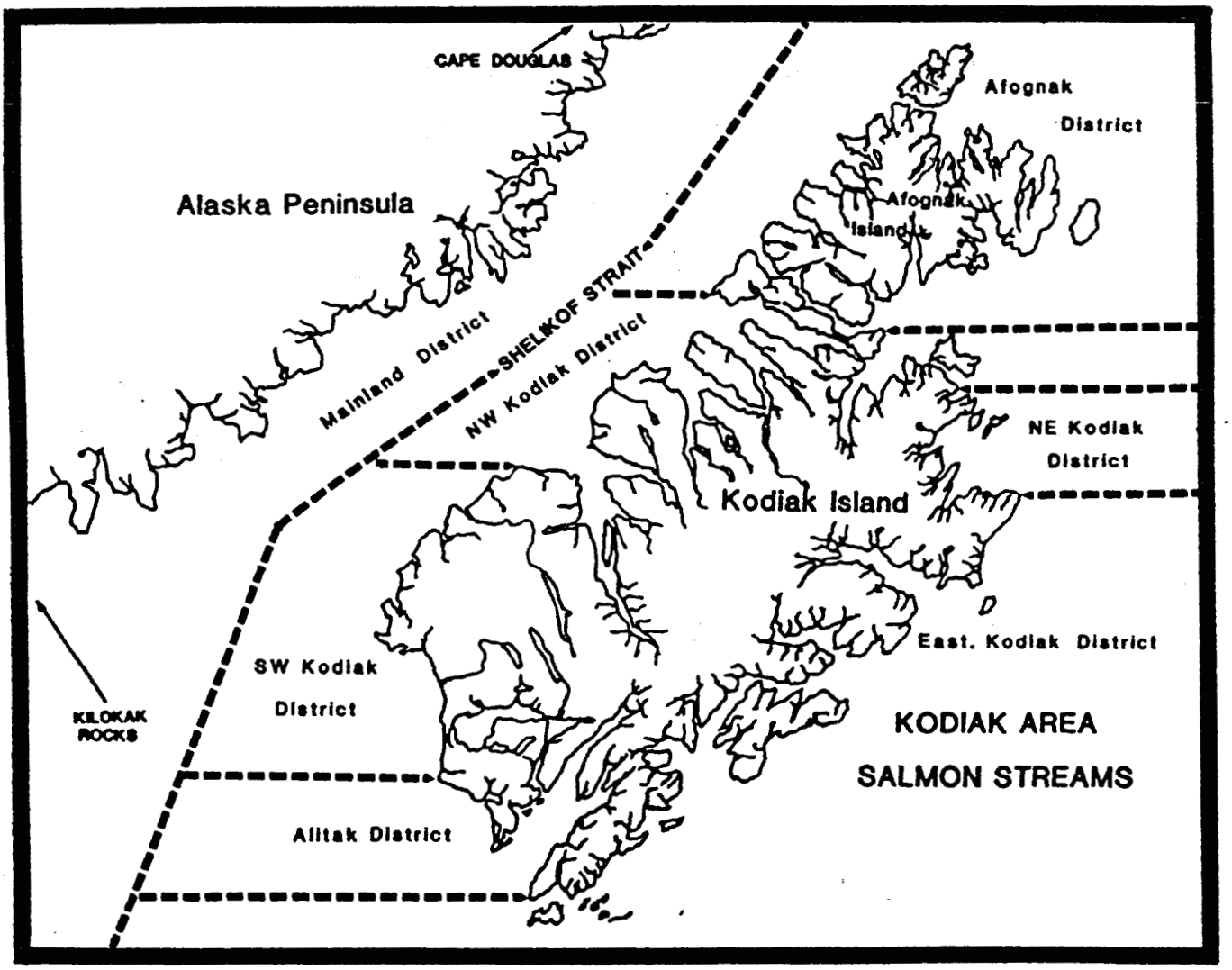
F2

KODIAK MANAGEMENT AREA
Salmon Production Systems

Estimated Number of Salmon Streams per District,[1/] with Species Distribution.[2/]

Management District	Number of Streams	Number of Streams With Each Species				
		King	Red	Coho	Pink	Chum
Afognak	89	0	15	48	89	5
NW Kodiak	58	0	3	22	58	23
SW Kodiak	11	2	2	10	11	6
Alitak	27	1	5	15	27	14
East. Kodiak	101	1	4	32	101	47
NE Kodiak	26	0	1	20	26	9
Mainland	74	0	6	27	74	46
TOTAL	386	4	36	174	386	150

1/ The total number of streams identified in this table are depicted on the 1989 Kodiak Area Salmon District Map.
2/ These estimates are based on current knowledge and, in fact, are expected to change as more system specific data is collected.

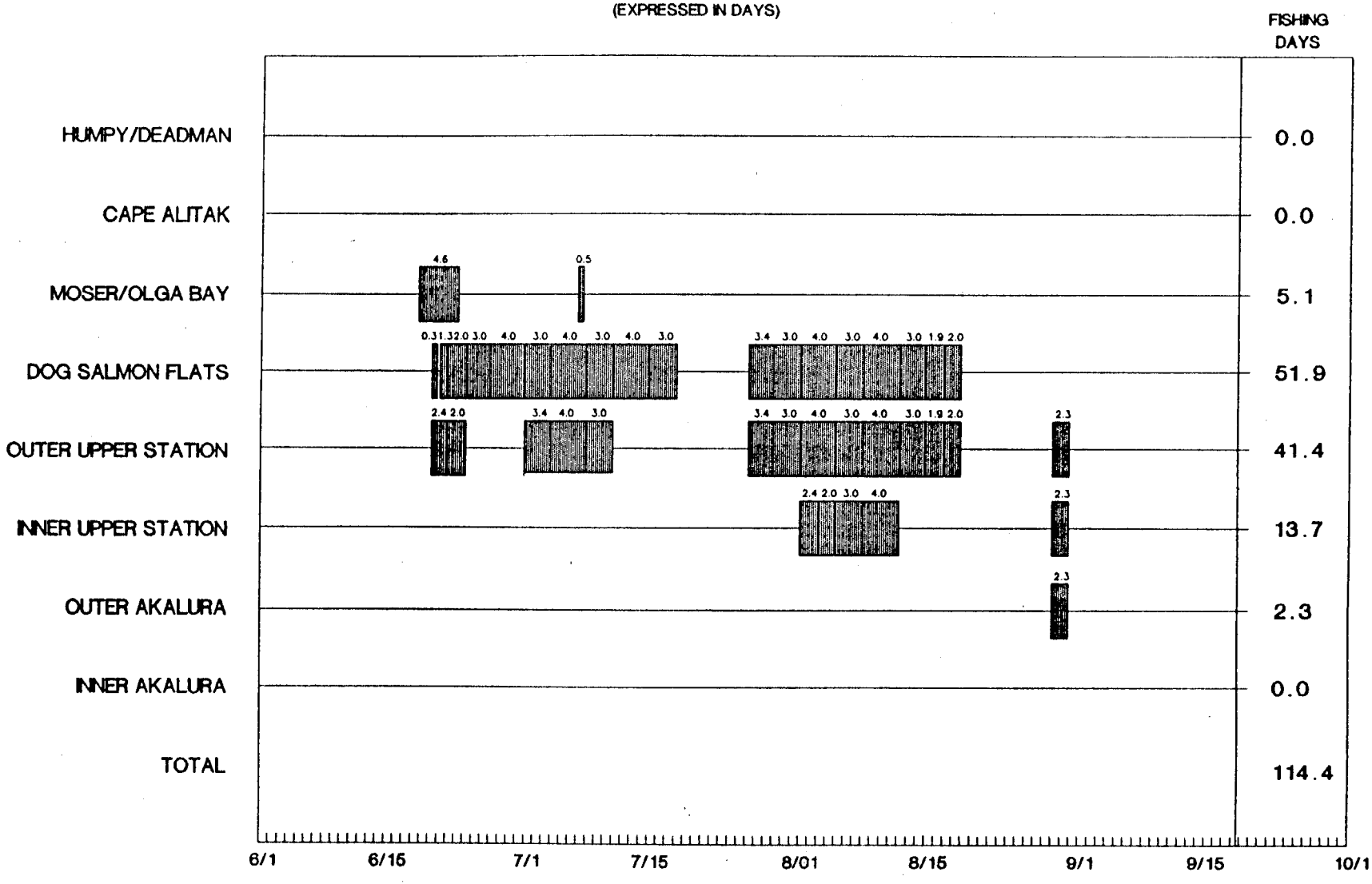


KODIAK MANAGEMENT AREA

1989 COMMERCIAL SALMON FISHERY

SUMMARY OF FISHING TIME BY MANAGEMENT UNIT FOR THE ALITAK DISTRICT

(EXPRESSED IN DAYS)



KODIAK MANAGEMENT AREA

Salmon Production[1/] - Potential vs. Actual

(MILLIONS OF FISH)

SPECIES	PRODUCTION POTENTIAL LONG TERM AVERAGE			HARVEST POTENTIAL	HARVEST ACTUAL	
	Desired Indexed Escapement	Return Per Spawner	Total Return	Long Term Average	107 Year Period (1882-1988)	13 Year Period (1976-1988)
KING	.015	2.0	.030	.015	.002	.004
RED	1.800	2.5	4.500	2.700	1.000	1.445
COHO	.150	2.0	.300	.150	.080	.168
PINK O.[2/]	2.000	4.0	8.000	6.000	7.700	7.481
PINK E.[3/]	3.900	4.0	15.600	11.700		12.585
CHUM	.700	3.0	2.100	1.400	.700	.929
TOTAL O.[2/]	**4.665**	-	**14.930**	**10.265**	9.500	**10.027**
TOTAL E.[3/]	**6.565**	-	**22.530**	**15.965**		**15.131**

1/ Natural Production
2/ O. = Odd Numbered Years
3/ E. = Even Numbered Years

2/15/89
L.M./D.P.

TABLE

1989 KODIAK MANAGEMENT AREA COMMERCIAL HARVEST SUMMARY
PRE-SEASON PROJECTIONS VS. POST-SEASON PROJECTIONS

HARVEST	Kings	Reds	Coho	Pinks	Chums	Total
PRE-SEASON PROJECTIONS						
KODIAK NATURAL	9,900	2,160,000	200,000	8,400,000	1,015,000	11,784,900
KODIAK HATCHERY	-	-	-	2,100,000	-	2,100,000
CAPE IGVAK[1]	-	274,000	-	-	-	274,000
OTHER[2]	-	100,000	-	-	-	100,000
AREA WIDE GRAND TOTAL:	9,900	2,534,000	200,000	10,500,000	1,015,000	14,258,900
POST-SEASON FINAL						
KODIAK NATURAL						
ACTUAL[3]						
OIL TEST	0	116	0	1,002	37	1,155
ADF&G TEST	0	1,873	0	14	8	1,894
COMMERCIAL	106	1,287,547	2,599	182,220	19,927	1,492,399
TOTAL	106	1,289,536	2,599	183,236	19,972	1,495,449
PROJECTED[4]						
TOTAL	4,745	1,234,149	138,834	16,027,609	815,762	18,221,099
TOTAL NATURAL[5]	4,851	2,523,685	141,433	16,210,845	835,734	19,716,548
KODIAK HATCHERY						
COST RECOVERY (NORMAL)[6]	-	-	-	(204,223)[6]	-	(204,223)[6]
SUPPLEMENTAL[7]	-	-	-	6,437,666	-	6,437,666
TOTAL HATCHERY	-	-	-	6,437,666	-	6,437,666
NON-KODIAK						
CAPE IGVAK[8]	-	4,880	-	-	-	4,880
OTHER[9]	-	100,000	-	-	-	100,000
TOTAL NON-KODIAK	-	104,880	-	-	-	104,880
AREA WIDE GRAND TOTAL[10]	4,851	2,628,565	141,433	22,648,511	835,734	26,259,094

1/ADF&G's pre-season estimate of red salmon which may be available for harvest in the Cape Igvak Section management unit during the time period June 5-26 and July 9-25; of this projected harvest, 219,000 reds (80%) would be Chignik-bound reds.

2/ADF&G's pre-season estimate of Cook Inlet-bound sockeye which may be available for harvest in the North Shelikof management unit during the time period July 6-25.

3/Actual Natural Fish Harvested. Date Source: ADF&G Kodiak fish ticket summaries.

4/Estimated Natural "Paper" Fish, i.e. Fish projected to have been harvested if normal fishing conditions had occurred. Data Source: Regional Information Report 4K89-? (In Press).

5/Projected Natural Total Harvest if normal fishing conditions had occurred. Includes actual and projected harvest on Kodiak stocks, and the projected harvest of Kodiak red salmon in the Cape Igvak Section based on one (1) day of fishing. (Allocative requirements of the Cape Igvak plan would have resulted in only one (1) day of fishing.) (The estimated total catch of red salmon in the Cape Igvak Section would have been 6,100 of which 1,220 would be designated Kodiak-bound reds and 4,880 Chignik-bound reds.)

6/These fish would not have been available to a normal commercial fishery in 1989 and these fish are not included in the totals of this table; they appear in this table only to identify that they are not used.

7/These fish would have been caught in a normal fishery.

8/This is an estimate of Chignik-bound red salmon which would have been harvested in the 1989 Cape Igvak fishery.

9/The pre-season projected Kodiak Area harvest on Cook Inlet-bound reds of 100,000 fish represented ADF&G's estimate of maximum harvest on Cook Inlet's projected sockeye return; because of the vagaries of weather, migration pattern, tides, and red salmon abundance the actual availability of Cook Inlet-bound sockeye to the Kodiak purse seine fleet is literally a guess. Nevertheless, it's expected that some harvest on Cook Inlet-bound sockeye would have occurred because of the fact that fishing time in the North Shelikof management units would have been adequate and there would have been a fleet available due to a complete closure in the Cape Igvak Section. Also, the pre-season forecast for the Cook Inlet red run was substantially below the actual return, thus potentially enhancing the Cook Inlet-bound sockeye bycatch in Kodiak's pink and chum fisheries in the North Shelikof during the time period 7/6-25. Also, the weather conditions during this time period would have allowed a near-normal fishing pattern to occur at the traditional cape, headland, and inshore "hook-hauling" locations. Consequently, it's assumed that a red salmon bycatch of Cook Inlet-bound reds in the North Shelikof management units would have approached the pre-season harvest projection of approximately 100,000 reds.

10/Projected Final Total Harvest of both natural and hatchery Kodiak salmon as well as Non-Kodiak salmon.

KODIAK MANAGEMENT AREA
1989 COMMERCIAL SALMON HARVEST
Actual Harvest by Species by Management Units

(Preliminary 11/15/89)

FISHERY	KING	REDS	COHO	SPECIES PINK	CHUM	TOTAL
COMMON PROPERTY						
ALITAK DISTRICT (Gillnet Only)						
NO.S	106	1,284,067	1,613	182,217	19,908	**1,487,911**
AVG. WT.	19.2	5.53	8.77	3.57	8.75	-
lbs.	2,037	7,098,034	14,139	651,072	174,158	**7,939,440**
AVG. $/lb	$1.10	$1.60	$0.60	$0.35	$0.40	-
EX-VESSEL $	$2,240	11,356,855	$8,483	$227,875	$69,665	**$11,665.118**
INNER KARLUK SECTION (Seine Only)						
NO.S	-	3,480	987	-	-	**4,467**
AVG. WT.	-	4.9	10.44	-	-	-
lbs.	-	17,359	9,278	-	-	**26,637**
AVG. $/lb.	-	$1.60	$ 0.60	-	-	-
EX-VESSEL $	-	$27,774	$5,567	-	-	**$33,341**
COMMON PROPERTY						
TOTALS (All Gears)						
NO.S	**106**	**1,287,547**	**2,599**	**182,220**	**19,927**	**1,492,399**
AVG. WT.	19.2	5.53	9.00	3.57	8.75	-
lbs.	2,037	7,115,393	23,417	651,072	174,158	7,966,077
AVG. $/lb.	$1.10	$1.60	$0.60	$0.35	$0.40	-
EX-VESSEL $	$2,240	$11,384,629	$14,050	$227,875	$69,665	**$11,698,459**
HATCHERY COST RECOVERY						
NO.S	-	-	-	6,437,666	-	**6,437,666**
AVG. WT.	-	-	-	2.97	-	**2.97**
lbs.	-	-	-	1,928,525	-	**1,928,525**
AVG. $/lb.	-	-	-	$0.55	-	-
EX-VESSEL $	-	-	-	**$10,588,748**	-	**$10,588,748**

TABLE

KODIAK MANAGEMENT AREA
ESTIMATED VALUE OF THE 1989 COMMERCIAL SALMON FISHERY ON KODIAK SALMON PRODUCTION[1]
(BASED ON ESTIMATION OF SALMON AVAILABLE TO FISHERY)

	Kings	Reds	Coho	Pinks	Chums	Total
Total Actual Natural[2]	106	1,289,536	2,599	183,236	19,972	1,495,449
Total Projected Natural[3]	4,745	1,234,149	138,834	16,027,609	815,762	18,221,099
Grand Total Natural:	4,851	2,523,685	141,433	16,210,845	835,734	19,716,548
Avg. Wt.	19.2	5.53	9.00	3.34	6.18	-
Pounds of Fish	93,139	13,955,978	1,272,897	54,144,222	5,164,836	74,631,072
Avg $/lb.	1.1000	1.6000	0.6000	0.3500	0.4000	-
Ex-Vessel Value	$102,453	$22,329,565	$76,374	$18,950,479	$2,065,935	$43,524,806
Total Actual Hatchery[4]	-	-	-	6,437,666	-	6,437,666
Avg. Wt.	-	-	-	2.97	-	-
Pounds of Fish	-	-	-	19,128,525	-	19,128,525
Avg. $/lb.	-	-	-	0.5536	-	-
Ex-Vessel Value	-	-	-	$10,588,748	-	$10,588,748
GRAND TOTAL EX-VESSEL VALUE FOR KODIAK NATURAL AND HATCHERY COMBINED						
TOTAL NO.S	4,851	2,523,685	141,433	22,648,511	855,734	26,154,214
TOTAL LBS.	93,139	13,955,978	1,272,897	73,272,747	5,164,836	93,759,597
TOTAL EX-VESSEL VALUE[1]	$102,453	$22,329,565	$76,374	$29,539,227	$2,065,935	$54,113,554

[1]This table provides an estimate of what the total ex-vessel value of the 1989 commercial salmon fishery would have been if a normal fishery had occurred. The estimated value shown in [2] has actually been paid to fishermen by processors, the estimated value shown in [3] has been partially paid to fishermen by Exxon as of 11/1/89, the estimated value in [4] is being held in escrow pending final resolution of a claim on this value by both the Kodiak Regional Aquaculture Association and Exxon. These figures do not include pre-season harvest estimates of non-Kodiak red salmon.

[2]Total Actual Kodiak Natural = Total harvest from commercial fisheries as derived from fish tickets.

[3]Total Projected Kodiak Natural = Estimated harvest which would have occurred if a normal fishery had occurred; figures derived from ADF&G post-season analysis of total run strength as described in Regional Information Report 4K89-? (In press). These figures do not include pre-season harvest of non-Kodiak red salmon.

[4]Total Actual Hatchery = Total harvest in the Kitoi Bay cost-recovery fishery minus 204,223 pinks which were sold to pay for hatchery operational costs; figures derived from fish tickets.

Table 3.

KODIAK MANAGEMENT AREA
1989 COMMERCIAL SALMON FISHERY
ESTIMATED AVERAGE EX-VESSEL VALUE BY GEAR TYPE

	Kings	Reds	Coho	Pinks	Chums	Total
Post-season[1/]						
- Projected Harvest	4,851	2,523,685	141,433	22,648,511	855,734	26,154,214
- Ex-Vessel Value	$0.103	$22.330	$0.764	$29.539	$2.066	$54.114
1988 % Harvest[2/]						
Each Species by Gear Type						
P.S.	.96	.68	.88	.83	.85	
B.S.	< .01	<. 01	< .01	.02	.02	
G.N.	.04	.32	.12	.15	.13	
Projected 1989[3/]						
Total Ex-Vessel Value						
Each Species by Gear Type						
P.S.	$0.099	$15.184	$0.672	$24.517	$1.756	$42.228
B.S.	$< 0.001	$< 0.001	$< 0.001	$0.591	$0.041	$0.632
G.N.	$0.004	$7.146	$0.092	$4.431	$0.269	$11.942
Total	$0.103	$22.330	$0.764	$29.539	$2.066	$54.802
Projected 1989[4/]						
Average Ex-Vessel Value						
Per Unit of Gear						
(1988 Gear Level)						
323 P.S.	$< .001	$ .047	$ .002	$.076	$.005	$.130
21 B.S.	$< .001	$< .001	$< .001	$.028	$.002	$.030
180 G.N.	$< .001	$ .040	$ .001	$.025	$.002	$.100

[1/]Information derived from Table 2 of this report; It assumes that if a normal fishery had occurred in 1989, the total harvest would have included natural production, actual harvest and projected harvest as well as excess cost-recovery fish from hatchery production.

[2/]Assumes that the 1989 harvest would be proportional by gear type to the 1988 harvest.

[3/]Assumes the assumptions in [1/] and [2/] would have been correct.

[4/]Assumes that the active gear levels in 1989 would have been the same as for 1988; Also assumes the assumptions used to develop [3/] would have been correct.

T 3

TABLE 4.

KODIAK MANAGEMENT AREA
ESTIMATED SALMON HARVEST AND VALUE BY GEAR TYPE[1]
1970 - 1989

Year	Total Harvest[2]	Total Value	Average Purse Seine	Average Beach Seine	Average Set Net
1970	13,949,000	$21,658,000	$41,880	$10,470	$21,083
1971	6,376,000	4,973,000	13,397	2,919	3,015
1972	3,890,000	3,909,000	9,233	647	1,451
1973	1,001,000	2,094,000	5,075	251	852
1974	3,323,000	4,808,000	15,993	4,406	4,828
1975	3,187,000	3,831,000	13,300	5,600	3,849
1976	12,484,000	16,976,000	43,017	11,035	14,481
1977	7,977,000	21,000,000	48,382	12,434	19,351
1978	16,942,000	32,000,000	72,158	15,731	25,495
1979	12,420,000	25,000,000	48,906	18,839	23,000
1980	19,157,000	31,000,000	69,117	7,710	21,578
1981	13,057,000	33,000,000	75,257	17,312	26,231
1982	10,892,000	16,230,000	31,868	10,549	30,554
1983	7,082,000	14,530,000	32,832	5,886	19,338
1984	13,678,000	26,202,000	72,018	12,577	26,777
1985	9,898,000	20,782,000	45,303	6,451	31,296
1986	15,957,000	39,106,000	92,933	9,517	69,644
1987	7,745,000	28,113,000	71,170	12,780	38,000
1988	18,711,000	94,075,000	228,000	41,000	115,000
1989[3]	26,209,000	54,113,554	130,000	30,000	100,000
19 Year Average 1970-1988	**10,406,632**	**$23,120,368**	**$54,202**	**$10,848**	**$26,096**

[1]Value is an "ex-vessel value" based upon ADF&G's average estimate of in-season grounds price; It does not include additional value associate associated with "dock deliveries" and "post-season settlements".

[2]Includes total commercial harvest; excludes test fishery and Kitoi cost-recovery fishery harvests.

[3]Estimated projected harvest for 1989 includes actual and projected harvest on natural Kodiak stocks and the actual harvest on hatchery stocks from the supplemental cost-recovery fishery. The estimated total value uses average in-season prices for the actual natural harvest expanded to the estimated projected natural harvest and uses the in-season "bid" prices for the actual hatchery harvest. The average ex-vessel value by gear type uses 1988 gear levels and proportional harvest by gear type as if a normal fishery occurred on a normal distribution of fish.

KODIAK MANAGEMENT AREA

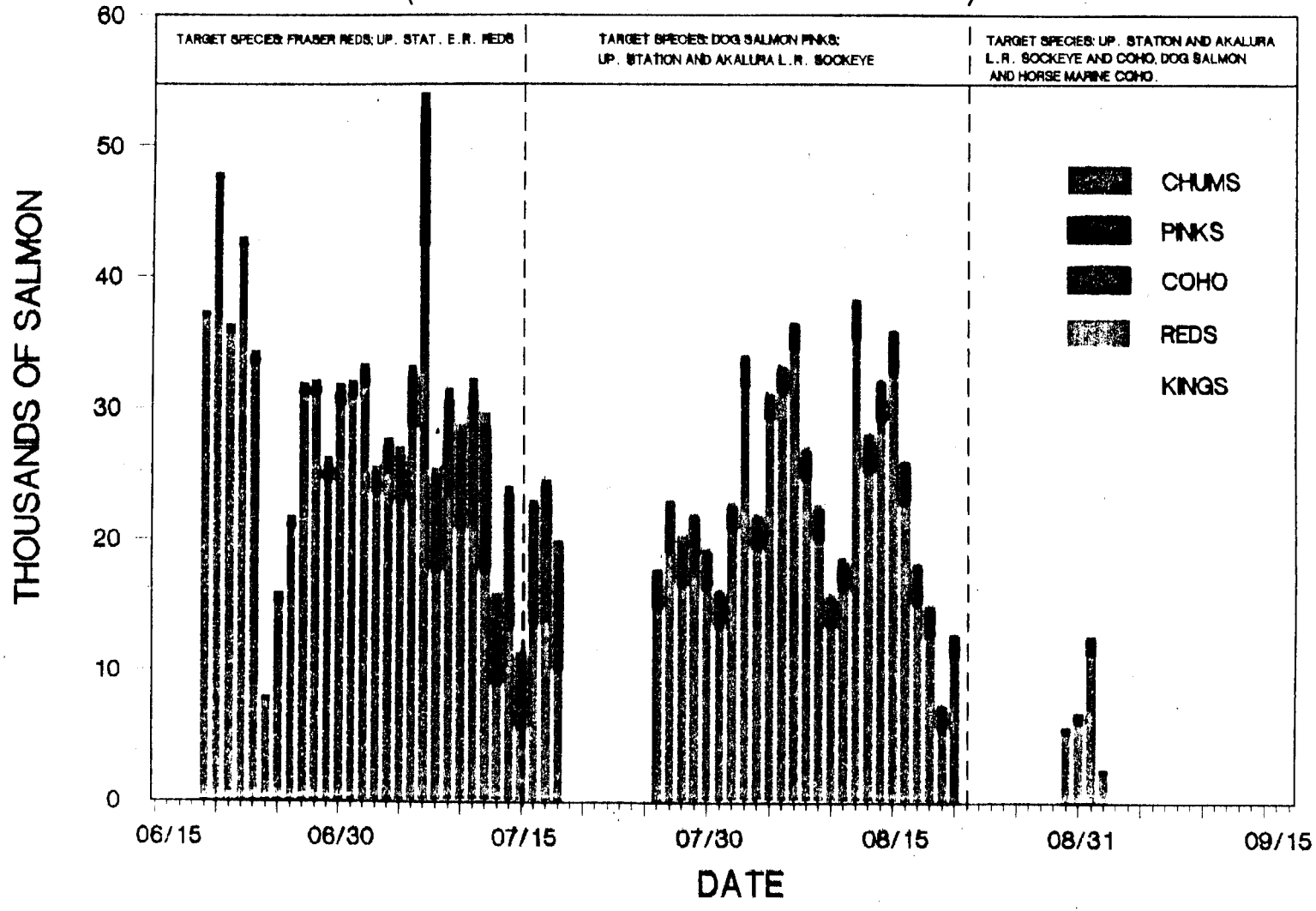
1989 SOCKEYE HARVEST SUMMARY FOR THE ALITAK BAY DISTRICT

HARVEST BY STOCK BY MGMT. UNIT	EARLY RUN SOCKEYE	LATE RUN SOCKEYE	TOTAL SOCKEYE
FRASER STOCK			
MOSER/OLGA BAY	223,257	-	223,257
DOG SALMON FLATS	388,726	-	388,726
SUB-TOTAL	**611,983**	-	**611,983**
UPPER STATION STOCK			
MOSER/OLGA BAY	24,806	0	24,806
DOG SALMON FLATS	43,192	132,900	176,092
OUTER UPPER STATION	11,967	434,035	446,002
INNER UPPER STATION	0	0	0
SUB-TOTAL	**79,965**	**566,935**	**646,900**
AKALURA STOCK			
MOSER/OLGA BAY	0	0	0
DOG SALMON FLATS	0	0	0
OUTER UPPER STATION	0	25,184	25,184
SUB-TOTAL	**0**	**25,184**	**25,184**
TOTAL ALL STOCKS			
MOSER/OLGA BAY	248,063	0	248,063
DOG SALMON FLATS	431,918	132,900	564,818
OUTER UPPER STATION	11,967	434,035	446,002
INNER UPPER STATION	0	0	0
OUTER AKALURA	0	25,184	25,184
GRAND TOTAL	**691,948**	**592,119**	**1,284,067**

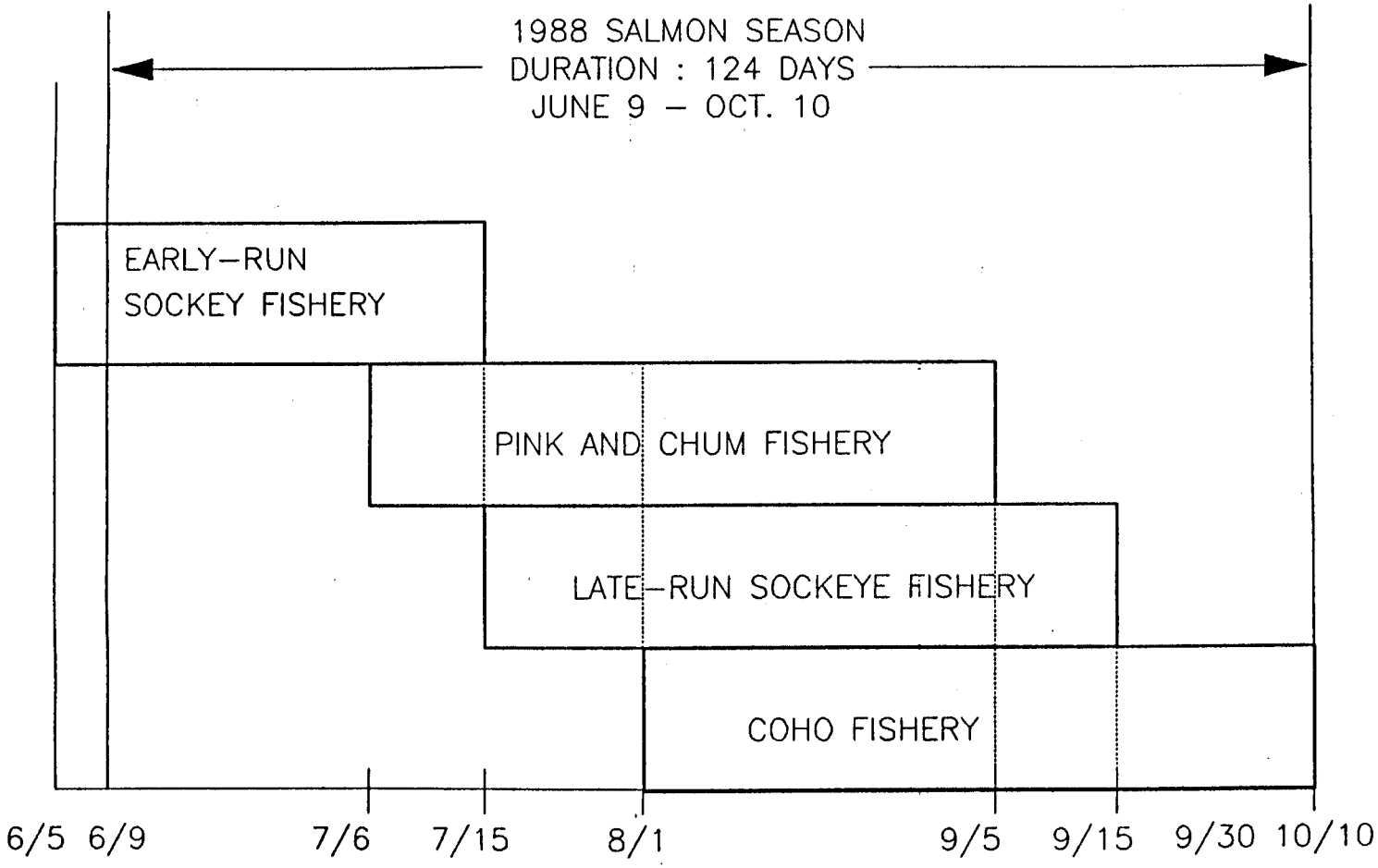
KODIAK MANAGEMENT AREA

1989 COMMERCIAL SALMON FISHERY

HARVEST SUMMARY BY DAY FOR THE ALITAK DISTRICT (EXCLUSIVE GILLNET AREAS ONLY)



KODIAK COMMERCIAL SALMON FISHERIES MANAGEMENT CHRONOLOGY



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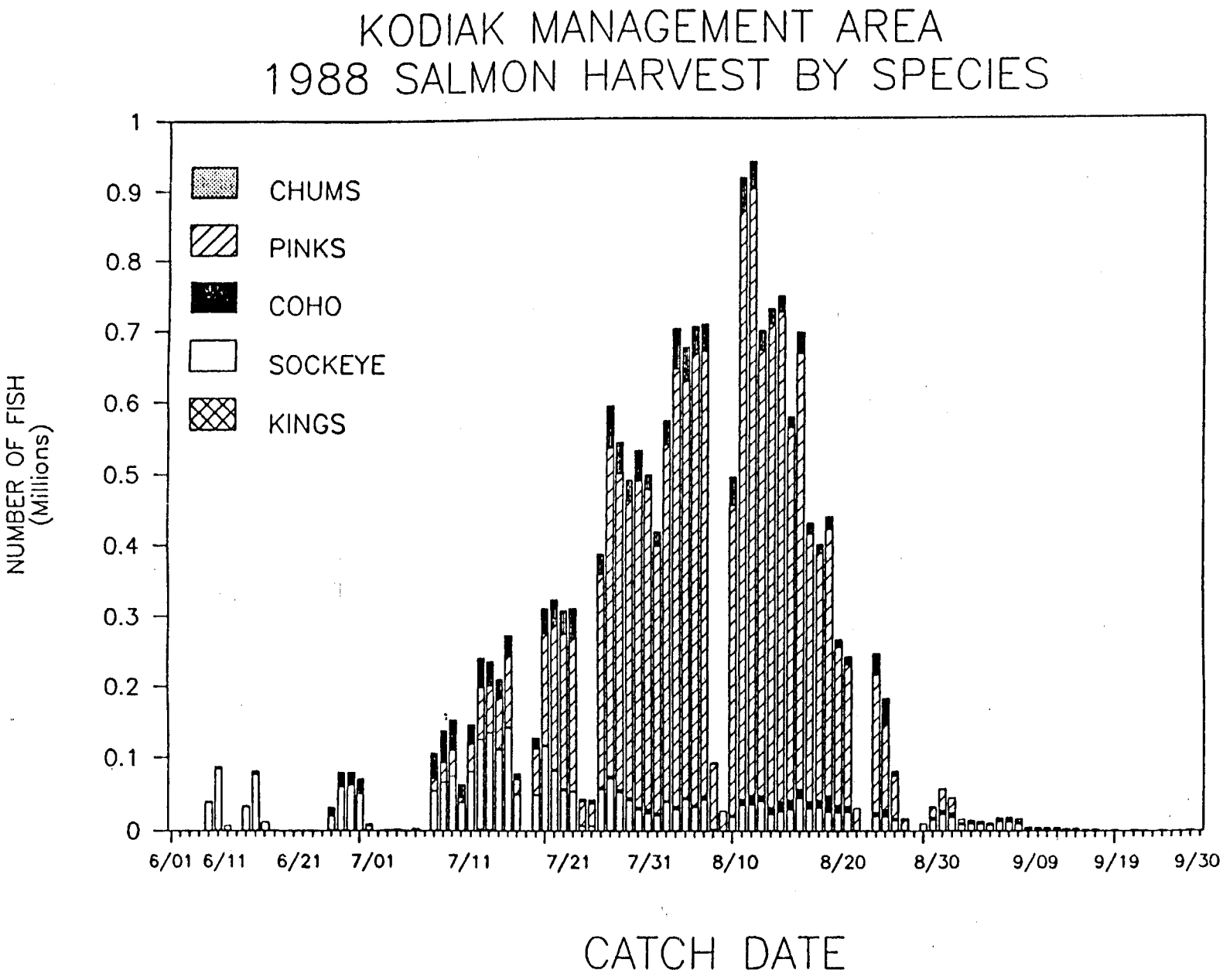
KODIAK MANAGEMENT AREA
1988 SALMON HARVEST BY SPECIES
CHUMS
PINKS
COHO
SOCKEYE
KINGS
NUMBER OF FISH
(Millions)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
6/01
6/11
6/21
7/01
7/11
7/21
7/31
8/10
8/20
8/30
9/09
9/19
9/30
CATCH DATE

KODIAK MANAGEMENT AREA
1989 COMMERCIAL SALMON FISHERY
SUMMARY OF EMERGENCY ORDERS ISSUED

Emergency Order No.	Time/Date Issued	Effective	Action Taken
33	6:00 P.M. 6/16/89	6:00 A.M. 6/19/89	Opening for 15 hours; 6:00 A.M. 6/19 - 9:00 P.M. 6/19: - Moser/Olga Bay Section
34			Herring E.O.
35	4:30 P.M. 6/19/89	9:00 P.M. 6/19/89	Extension for 72 hours; (See E.O.#37) 9:00 P.M. 6/19 - 9:00 P.M. 6/22: - Moser/Olga Bay Section Opening for 57 hours; 12:00 A.M. 6/20 - 9:00 P.M. 6/22: - Outer Upper Station Section Opening for 6 hours; 12:00 A.M. 6/20 - 6:00 P.M. 6/20: - Dog Salmon Flats Section
36	8:00 A.M. 6/21/89	3:00 P.M. 6/21/89	Opening for 30 hours; 3:00 P.M. 6/21 - 9:00 P.M. 6/22: - Dog Salmon Flats Section
37	4:30 P.M. 6/22/89 (3 hour notice announcement for all gillnet fishermen in Alitak District.)	9:00 P.M. 6/24/89	Extension for 48 hours: 9:00 P.M. 6/22 - 9:00 P.M. 6/24: - Moser/Olga Bay Section (only extended for 24 hours) - Outer Upper Station Section - Dog Salmon Flats Section
38	5:00 P.M. 6/23/89	9:00 P.M. 6/27/89	Extension for 72 hours; 9:00 P.M. 6/24 - 9:00 6/27: - Dog Salmon Flats Section
39	4:00 P.M. 6/26/89	9:00 P.M. 6/27/89	Extension for 96 hours; 9:00 P.M. 6/27 - 9:00 P.M. 7/1: - Dog Salmon Flats Section

KODIAK MANAGEMENT AREA
1989 COMMERCIAL SALMON FISHERY
SUMMARY OF EMERGENCY ORDERS ISSUED
(continued)

Emergency Order No.	Time/Date Issued	Effective	Action Taken
40	4:00 P.M. 6/30/89	9:00 P.M. 7/1/89	Extension for 72 hours; 9:00 P.M. 7/1 - 9:00 P.M. 7/4: - Dog Salmon Flat Section Opening for 81 hours; 12:00 A.M. 7/1 - 9:00 P.M. 7/4: - Outer Upper Station Section
41	4:00 P.M. 7/3/89	9:00 P.M. 7/4/89	Extension for 96 hours; 9:00 P.M. 7/4 - 9:00 P.M. 7/8: - Outer Upper Station Section - Dog Salmon Flats Section
42	4:45 P.M. 7/5/89	12:00 A.M. 7/7/89	Opening for 81 hours; (See E.O. #43) 12:00 Noon. 7/7 - 9:00 P.M. 7/10: - Moser/Olga Bay Section
43	6:00 P.M. 7/7/89	11:00 P.M. 7/7/89	Closure due to close proximity of oil contaminated waters to fishing grounds of the: - Moser/Olga Bay Section (only open for 11 hours) Extension for 72 hours; 9:00 P.M. 7/8 - 9:00 P.M. 7/11: - Outer Upper Station Section - Dog Salmon Flats Section
44	3:00 P.M. 7/10/89	9:00 P.M. 7/11/89	Extension for 96 hours; 9:00 P.M. 7/11 - 9:00 P.M. 7/15: - Dog Salmon Flats Section
45	6:00 P.M. 7/14/89	9:00 P.M. 7/15/89	Extension for 72 hours; 9:00 P.M. 7/15 - 9:00 P.M. 7/18: - Dog Salmon Flats Section

KODIAK MANAGEMENT AREA
1989 COMMERCIAL SALMON FISHERY
SUMMARY OF EMERGENCY ORDERS ISSUED
(continued)

Emergency Order No.	Time/Date Issued	Effective	Action Taken
46	4:00 P.M. 7/24/89	12:00 A.M. 7/26/89	Opening for 81 hours; 12:00 A.M. 7/26 - 9:00 P.M. 7/29: - Outer Upper Station Section - Dog Salmon Flats Section East of 154°01' W. long.
47	11:00 A.M. 7/28/89	9:00 P.M. 7/29/89	Extension for 72 hours; 9:00 P.M. 7/29 - 9:00 P.M. 8/1: - Outer Upper Station Section - Dog Salmon Flats Section East of 154°01' W. long.
48	6:00 P.M. 7/31/89	12:00 A.M. 8/1/89	Extension for 96 hours; 9:00 P.M. 8/1 - 9:00 P.M. 8/5: - Outer Upper Station Section - Dog Salmon Flats Section East of 154°01' W. long. Opening for 57 hours; 12:00 A.M. 8/1 - 9:00 P.M. 8/3: - Inner Upper Station Section
49	4:30 P.M. 8/2/89	9:00 P.M. 8/3/89	Extension for 48 hours; 9:00 P.M. 8/3 - 9:00 P.M. 8/5: - Inner Upper Station Section
50	12:00 A.M. 8/4/89	9:00 P.M. 8/5/89	Extension for 72 hours; 9:00 P.M. 8/5 - 9:00 P.M. 8/8: - Outer Upper Station Section - Inner Upper Station Section - Dog Salmon Flats Section East of 154°01' W. long.

KODIAK MANAGEMENT AREA
1989 COMMERCIAL SALMON FISHERY
SUMMARY OF EMERGENCY ORDERS ISSUED
(continued)

Emergency Order No.	Time/Date Issued	Effective	Action Taken
51	3:00 P.M. 8/7/89	9:00 P.M. 8/8/89	Extension for 96 hours; 9:00 P.M. 8/8 - 9:00 P.M. 8/12: - Outer Upper Station Section - Inner Upper Station Section - Dog Salmon Flats Section East of 154°01' W. long.
52	3:00 P.M. 8/11/89	9:00 P.M. 8/12/89	Extension for 72 hours; 9:00 P.M. 8/12 - 9:00 P.M. 8/15: - Outer Upper Station Section - Dog Salmon Flats Section East of 154° 01' W. long.
53	2:00 P.M. 8/14/89	9:00 P.M. 8/15/89	Extension for 45 hours; 9:00 P.M. 8/15 - 6:00 P.M. 8/17: - Outer Upper Station Section - Dog Salmon Flats Section East of 154° 01' W. long.
54	2:00 P.M. 8/16/89	6:00 P.M. 8/17/89	Extension for 48 hours; 6:00 P.M. 8/17 - 6:00 P.M. 8/19: - Outer Upper Station Section - Dog Salmon Flats Section East of 154° 01' W. long.
55	11:00 A.M. 8/28/89	12:00 Noon 8/29/89	Opening for 54 hours: 12:00 Noon 8/29 - 6:00 P.M. 8/31: - Inner Upper Station Section - Outer Upper Station Section - Outer Akalura Section East of 154°17'51" W. long.
56	5:00 P.M. 9/14/89	12:00 Noon 9/16/89	Opening for two six hour periods: 12:00 Noon 9/16/89-6:00 P.M. 9/16/89 12:00 Noon 9/17/89-6:00 P.M. 9/17/89 - Closed water portion of Inner Karluk Section west of "King Hole"

KODIAK MANAGEMENT AREA
1989 COMMERCIAL SALMON HARVEST

1989 HARVEST	KINGS	REDS	COHO	PINKS	CHUMS	TOTAL
1989 Projected Harvest	9,900	2,534,000	200,000	10,500,000	1,015,000	14,258,000
1989 Actual Harvest	0	1,288,000	4,000	6,623,000	20,000	7,935,000
1990 Projected Harvest	8,000	2,300,000	190,000	11,790,000	705,000	14,993,000

FISHERY	1989 HARVEST Projection	1989 HARVEST Actual[1]	1990 HARVEST Projection (As of 11/1)
Early Run Sockeye Salmon Fisheries (6/9-7/15)			
Cape Igvak	.141	.000	.060
Karluk	.250	.000	.250
Ayakulik	.367	.000	.300
Fraser	.132	.612	.050
Upper Station	.091	.080	.050
Minor Systems	.070	.000	.040
Other	.070	.000	.070
Sub-Total	1.121	.692	.820
Late Run Sockeye Salmon Fisheries (7/16-9/15)			
Cape Igvak	.133	.000	.080
Karluk	.300	.003	.550
Ayakulik	.151	.000	.200
Fraser	-	-	-
Upper Station	.779	.567	.600
Minor Systems	.020	.025	.020
Other	.030	.000	.030
Sub-Total	1.413	.595	1.480
Coho Salmon Fisheries (8/1-10/1)			
Afognak	.050	.000	.027
Westside	.065	.001	.095
Alitak	.030	.003	.025
Eastside/Northend Kodiak	.025	.000	.022
Mainland	.030	.000	.032
Sub-Total	.200	.004	.190
Pink Salmon Fisheries (7/6-9/5)			
Afognak (Hatchery)	2.100	6.441	2.890
Afognak (Natural)	.350	.000	1.850
Westside Kodiak	3.100	.000	3.350
Alitak	2.100	.182	.400
Eastside/Northend Kodiak	1.850	.000	1.600
Mainland	1.000	.000	1.700
Sub-Total	10.500	6.623	11.790
Chum Salmon Fisheries (7/6-9/5)			
Afognak (Hatchery)	.000	.000	.000
Afognak (Natural)	.050	.000	.035
Westside Kodiak	.350	.000	.325
Alitak	.080	.020	.055
Eastside/Northend Kodiak	.260	.000	.060
Mainland	.275	.000	.230
Sub-Total	1.015	.020	.705
GRAND TOTAL	14,258,900	7,934,000	14,993,000[2]

[1] 1989 actual harvest of fish which would also have been harvested in a normal fishery these numbers do not include the "lost harvest" of fish which were not harvested because of oil-contaminated waters.

[2] Includes 8,000 kings - projected harvest

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