

**Alaska Board of Fisheries
Findings
Chum Salmon Conservation Measures For The
Arctic-Yukon-Kuskokwim and South Unimak/Shumagin Islands June
Fisheries**

A. Background:

By legal notice dated February 1, 1994, the Alaska Board of Fisheries (board) announced its intention to consider chum salmon conservation measures throughout the Arctic-Yukon-Kuskokwim (AYK) and in the South Unimak/Shumagin Islands June fishery at its regularly scheduled board meeting in March 1994. The board meeting drew considerable public attendance and testimony. The board heard testimony from approximately 175 members of the public and 10 advisory committees. The board also reviewed a considerable volume of written comments submitted by the public prior to and during the meeting. The Alaska Department of Fish and Game (ADF&G, department) presented a comprehensive review of the information available for the AYK chum salmon stocks and fisheries and for the South Unimak/Shumagin Islands June fishery.

The board has examined the Alaska Peninsula June fisheries and their relationship to the AYK chum salmon stocks and fisheries numerous times. See board findings FB-1-92 and FB-06-92.

During the summer of 1993, it became apparent that AYK and other Alaska chum salmon returns were well below expectations, due primarily to the lack of four year old spawners.

Consequently, when the board met in October 1993 to review agenda change requests and petitions, the board considered requests to revisit the chum salmon cap in the South Unimak/Shumagin Islands June fishery. The board found that these requests did not meet the criteria set out in 5 AAC 39.999 for taking the matter out of cycle. Additionally, ADF&G indicated there was no new information regarding chum salmon stock identification in the South Unimak/Shumagin Islands June fishery. Nor was there any indication from ADF&G that the estimated 2.5 million missing AYK chum salmon were related to the June fishery.

Immediately after the board adjourned its October 1993 meeting, the commissioner of ADF&G called a special meeting of the board for December 1993 to consider any and all actions to address the chum salmon conservation problems in the AYK fisheries.

The special informational meeting was convened on December 1 - 4, 1993 in Anchorage so that the board could consider scheduling matters for a regulatory meeting aimed at addressing the various AYK chum salmon problems. At the December meeting, the board heard three days of public comment from 80 members of the public and 9 advisory committees, and numerous staff reports

concerning chum salmon stocks from the Alaska Peninsula through nearly the northern extent of their range in the Kotzebue area. The meeting was not noticed for regulatory action, but the board agreed to review a number of department options addressing conservation concerns throughout the suspected range of AYK chum salmon stocks. The board eliminated a specific 300,000 fish reduction in South Unimak/Shumagin Islands chum cap, but did agree to re-examine that cap at the March 1994 meeting.

The department-generated proposals were initially published with the February 1, 1994 public notice, with revised set of proposals published in early March for public review and comment and scheduled for board consideration at the March 1994 meeting.

At the March board meeting, the board considered six proposals submitted by the department. The proposals provided generally for an AYK region wide rebuilding plan that would allow chum salmon saved in a fishery to pass through to the spawning grounds, provide the department with greater flexibility for inseason management to conserve chum salmon during fisheries for other salmon, and where possible, provided additional opportunities for subsistence fisheries while protecting chum salmon stocks. The actions taken by the board for the AYK fisheries and for the South Unimak/Shumagin Islands June fishery are generally as set out in Section B of these findings.

B. Summary of Regulatory Changes Adopted by the board:

The board took action to conserve AYK chum salmon stocks and to allocate the burden of conservation consistent with the "Policy for the Management of Mixed Stock Salmon Fisheries" [5 AAC 39.220]. With respect to the AYK fisheries, these measures are intended to minimize, if necessary, the taking of chum salmon while allowing subsistence fishing of other salmon species. These measures also provide for the commercial and sport harvests of other salmon species where escapement is met and subsistence is provided for and there is additional harvestable fish.

With respect to the South Unimak/Shumagin Islands June fishery, these measures provide the department with additional flexibility to further minimize the possibility of large chum salmon harvests by maximizing fishing opportunity during periods of high sockeye to chum salmon ratios.

Proposal No. 1: The board adopted an overall Arctic-Yukon-Kuskokwim Region Chum Salmon Rebuilding Management Plan with the guiding principle that the savings of chum salmon resulting from regulatory actions in a fishery to reduce chum salmon interceptions should be allowed to pass through subsequent fisheries to the spawning areas as needed to maintain sustained yield. This plan applies to all AYK chum salmon stocks and fisheries and to the South Unimak/Shumagin Islands June fishery.

Proposal No. 2: The board took action to make the harvestable surplus of chum salmon at the Sikusuiqa Springs Hatchery available to Kotzebue area

commercial fishers using set gillnets through emergency orders issued by the department. This action will maximize harvest on excess hatchery stocks returning to the Sikusuilaq hatchery, while intercepting wild chum salmon stocks as little as possible.

Proposal No. 3: In the Norton Sound-Port Clarence area, the board provided the department with authority to target commercial fishing on Chinook salmon by using larger mesh gillnet gear that would only minimally impact chum salmon, provided authority to allow only beach seine gear to be used for subsistence fishing, and to require that chum salmon taken with beach seine gear must be returned to the water alive. The board also provided authority to the department to close set gillnet gear separately from other gear by emergency order if necessary for the conservation of chum salmon.

Proposal No. 4: In the Yukon area, the board established a new coastal fishing district to allow flexibility in management actions if necessary to protect chum salmon during subsistence fisheries. The board also provided the department with authority to limit commercial fishing gear to large size Chinook salmon gillnet gear, to continue to provide for commercial fishing of Chinook salmon while minimizing interceptions of chum salmon. The regulations were amended to provide the department with authority to limit the size of gillnet gear for subsistence fishing to less than four inches or greater than eight inches to allow subsistence fishing while minimizing the impact on chum salmon and to require that fish wheels be equipped with live boxes and that chum salmon be returned to the water alive. The board provided authority for the department to conduct a test fishery in the Anvik River to determine the feasibility of harvesting surplus summer chum salmon without stressing Chinook stocks. The markers at the mouth of the Andreafsky River were moved to provide greater management flexibility. Additionally, the board created a time separation between commercial and subsistence fishing periods to lessen the opportunity for subsistence fish to be illegally sold, while still providing a reasonable opportunity for subsistence when there is a harvestable portion.

The Yukon River chum salmon stocks were also addressed through the Yukon River drainage Fall Chum Salmon Management Plan, which was adopted at this meeting. The purpose of this management plan is to assure adequate escapement of fall chum salmon into the tributaries of the Yukon River and to provide management guidelines to the department. The board applied the mixed stock policy (5 AAC 39.220) to the Yukon River fisheries and determined the policy has been met by the Yukon River Drainage Fall Chum Salmon Management Plan and the other management plans and regulations the board has in place in the Yukon River.

Proposal No. 5: In the Kuskokwim area, the board provided the department with authority to allow subsistence fishing for Chinook salmon with large mesh gillnet gear to minimize chum salmon interceptions, and limit the size of gillnet gear for subsistence fishing to less than four inches or greater than seven and one-half inches, and to require that fish wheels be equipped with live boxes and chum

salmon taken with a fish wheel or beach seine gear must be returned to the water alive.

Seven members participated in the vote on proposals 1-5 and the vote on each was 7-0.

Proposal no. 6: In the south Unimak/Shumagin Islands June fishery, the board amended the South Unimak/Shumagin Islands June Fishery Management Plan by deleting the fixed opening date, and eliminating the fixed sockeye quota periods. These actions give the department greater flexibility to harvest sockeye while the sockeye to chum salmon ratios are high.

Previously the management plan required the fisheries to be opened no earlier than June 13 and openings were conducted within specified periods with sockeye quotas, and closed when the sockeye quota of a certain period had been met. These amendments give the department the tools that they requested to reduce chum salmon catches in the June fishery by allowing fishing to continue when the sockeye to chum ratio is high. The Board adopted proposal six by a vote of 5-0. Two members did not participate or vote due to a determination by the Chair that they had a conflict of interest with regard to proposal six.

C. Findings--General:

1. The Board incorporates by reference its previous findings on the South Unimak/Shumagin Islands June fisheries, FB-1-92 and FB-06-92, and on Norton Sound chum salmon, 92-5-FB, and on Toklat fall chum salmon, 92-3-FB.

2. The Board incorporates by reference the public testimony, staff reports and Board discussion that occurred at the December 1 through 4 1993 informational meeting and at the March 1994 meeting.

D. Findings--AYK Management Measures:

The Board finds that stocks of chum salmon in Northern Norton Sound, the Aniak portion of the Kuskokwim drainage, and some of the Yukon River systems, particularly fall chums in the Toklat drainage, continue to fall below the catches and estimated escapements of the 1980's, and that the 1993 failure of a 4 year old spawners exacerbated existing problems in those systems.

The Board noted in amending Proposal 1, that managing for the high commercial catches in the AYK during the 1980's may or may not be a realistic goal. The Board believes that there is significant difference between managing for sustained yield and managing for high commercial catches and encourages state expenditures that will insure realistic management goals for these important systems.

From a conservation standpoint, it is difficult, if not impossible, to pin down a single regulatory solution to the chum salmon abundance problems being

experienced in some AYK systems. The extreme variability in stock conditions, unknown ocean survival, unknown effects of delayed maturity displayed by some west coast chum stocks, and imprecise harvest and escapement data for AYK chums all contribute to the difficulty of setting up effective regulatory and management regimes.

The problems occurring in some systems are even more baffling considering that other AYK chum stocks appear to be quite healthy. The Anvik River (a tributary to the Yukon River), generally considered to be the largest single chum salmon producing system in North America, continues to experience generally healthy runs and escapements. This is also the case for 75% of the chum stocks in Norton Sound, specifically those returning to the Southern Norton Sound Districts of Shaktoolik and Unalakleet. These districts continue to support healthy mixed stock chum salmon fisheries.

The Board also noted that in 1993 chum salmon abundance was far below average in all areas of Alaska north of Sitka. ADF&G staff reports during the December meeting indicated that the depressed chum returns may be linked to massive releases of chum salmon from Asian hatcheries. These releases may also be responsible for the delayed maturity of North American chums.

To further complicate the picture, the Board received informational reports from the staff and public that trawl bycatch of chum salmon during the 1993 Bering Sea pollock fishery was at an all time high. It remains unknown whether this bycatch indicates a high abundance of immature chum salmon rearing in the Bering Sea, or an elevated interception of already depressed stocks.

In taking the actions on Proposals 2-5, the Board sought ways to protect know chum salmon spawning stocks in troubled systems while providing maximum opportunities for subsistence, commercial, and sport fishing on healthy chum and other salmon populations. The Board established regulations which give the commissioner maximum flexibility to respond to inseason situations so that harvest opportunities can be maximized for all users.

E. Findings--South Unimak/Shumagin Islands June Fishery:

The board rejected an amendment to lower the South Unimak/Shumagin Island June Fishery Management Plan to lower the chum cap to 300,000 from 700,000 fish. (Two members found to have a conflict on interest on proposal six did not vote. Two members voted in favor of the amendment. Three voted in opposition.) The Board examined, in detail, the department's revised analysis of the 1987 tagging report which assigned stock-of-origin to the 1987 catch and extrapolated that stock identification to various chum caps for any year. The Board reviewed all information in its decision, and found the department's report to lead to the same conclusion that previous Boards came to in applying the 1987 tagging information.

In applying the department's revised analysis board members voting in opposition found that a 300,000 chum cap in the South Unimak/Shumagin Islands June fishery could be expected to provide only 4-5,000 chum salmon to Northern Norton Sound systems even assuming a zero mortality on these fish between the June fishery and Norton Sound. Only 27,000 to 43,000 chums could be delivered to the Yukon River under the department's revised analysis. These members found that these numbers of fish would be almost undetectable in areas as large as Northern Norton Sound or the Yukon River. In reaching this determination, they noted that it had arrived at exactly the same conclusion as previous Boards had using similar analyses. They also noted that the South Unimak/Shumagin Island June fishery catch of AYK bound chum salmon was relatively minor in comparison to the totality of AYK chum salmon abundance. These members also found that the conservation problems in the AYK fisheries could not be largely accounted for by the South Unimak/Shumagin Islands June fishery, nor would even a total closure of the June fishery be expected to bring about significant restoration of troubled AYK systems.

The Board applied the Mixed Stock Policy to the South Unimak/Shumagin Islands June fishery and found that the existing regulatory framework, and the new flexible additions to the regulations meets the policy. The management plan and the restrictive regulations adopted for this fishery over the past several years constitute appropriate assignment of conservation burden required by the policy even though the prevailing member of this Board and previous Boards have not found a significant cause and effect link between the South Unimak/Shumagin Islands June fishery and AYK fisheries.

Management actions in reducing fishing time and moving fleet pressure from waters where high concentrations of chums exist have kept the chum salmon harvest relatively stable over the last eight years. Chum caps established by previous Boards since 1986 have been exceeded only once; in 1991. Chum catches seem to be dependent upon the relative abundance of both chum and sockeye salmon. In other words, in years like 1993 when sockeye abundance is high and chum salmon abundance is low, the South Unimak/Shumagin Islands fishery is able to harvest its sockeye allocation without approaching the cap. Since the 1994 forecasts for Bristol Bay sockeye is at a record high, it is reasonable to expect that if sockeye abundance is high and chum abundance is low that the 700,000 chum salmon cap will not be reached unless chum abundance is also high, in which case that need to take severe measures in the June fishery are not required.

This fact, the new flexibility the department has, the fleet's commitment to work with the department to identify inseason areas that should be closed, and the voluntary "chum pool," provide protection to traveling chum salmon stocks that is consistent with the mixed stock policy and with sustained yield management.

Department calculations using a mathematical model based on past years' fishery performances indicated that a chum cap of 300,000 would mean a potential loss of 2,269,000 sockeye salmon to Area M fishers. This model projects average conditions and does not specifically account for either low or high chum abundance.

With a record sockeye run projected for Bristol Bay in 1994, this reduction of the cap could, however, according to the model, create a significant burden on Area M fishers and their families with the actual contribution of such a reduction insignificant in the conservation of AYK chum stocks.

F. Summary:

The actions taken at this meeting go far toward developing regulations to address the conservation concerns, foster sustained yield management, and rebuild Arctic-Yukon-Kuskokwim Region chum salmon stocks. Conservation concerns for several Arctic-Yukon-Kuskokwim Region chum salmon stocks that have been depressed in recent years have been identified and action taken to ensure sustained yield for these stocks. The Board also noted that the majority of this frustration in addressing the issue of resurrecting depleted AYK chum systems has less to do enacting more regulations than it has to do with acquiring more information. The Board discussed that the status of fisheries data in most of the AYK is extremely deficient, and continuing to deliberate regulatory solutions in the absence of basic biological data on AYK systems is counterproductive and a misdirection of time and resources. In addition, the Board of Fisheries and the Department of Fish and Game will work toward reducing the bycatch of western Alaskan origin chum salmon in ocean trawl fisheries.


Larry Engel, Chair
Alaska Board of Fisheries

APPROVED: 10/21/94 @ 8:27pm
Location: Fairbanks, AK

Action on AYK Portion of Findings:

(6/0/1: Yes/No/Abstain) Abstain: Virgil Umphenour

Action on South Unimak/Shumagin Islands June Fishery Portion of Findings:

(3/1/3: Yes/No/Abstain) Abstain: Virgil Umphenour;
Trefon Angasan, Jr.; and
Dick Jacobsen