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Previously
(Finding #96-06-FB)

ALASKA BOARD OF FISHERIES

YUKON RIVER DRAINAGE FALL CHUM SALMON MANAGEMENT PLAN FINDING

The Board of Fisheries (board) held a meeting in Anchorage, Alaska, on March 10 through 19, 1996. During this meeting, the board addressed Agenda Change Request 2, the review of *5 AAC 01.249. THE 1995 YUKON RIVER DRAINAGE FALL CHUM SALMON MANAGEMENT PLAN.* The board received public and advisory committee comments concerning the 1995 management plan. Public comments included proposed amendments from the Yukon River Drainage Fisheries Association (association).

The association's plan was different from the 1995 management plan by recommending that total closure of the subsistence chum salmon directed fishery in a given year would not occur unless the drainagewide escapement level was less than or equal to 350,000 fall chum salmon. The association proposed that at a run size greater than 350,000 fish, but less than or equal to 550,000 fall chum salmon, that the drainagewide escapement level be lowered from the 1995 management plan's 400,000 fall chum salmon level to 350,000 or 375,000 fall chum salmon, depending on the run strength. Additionally, the association proposed that during the most restrictive subsistence chum salmon directed fishing periods, that a human-food-only chum salmon directed fishery be allowed.

Similar to the 1995 management plan, the association's management plan continued to recommend that, with run size greater than 550,000 fall chum salmon, the subsistence directed chum salmon fisheries would be managed for a 400,000 drainagewide fall chum salmon escapement level. In managing the commercial, personal use, and sport-directed chum salmon fisheries, the association's plan would also continue to target for a 400,000 fall chum salmon drainagewide escapement level. The association argued that its management plan would provide for a modest level of fall chum salmon subsistence use during below average returns while ensuring sustained yield.

The board recognizes and appreciates the helpful role the association has had in fostering cooperative management by developing consensus among the different user groups and the Department of Fish and Game (department). The association's recommended Toklat River Fall Chum Salmon Rebuilding Plan is an excellent example of the association's performance in developing comprehensive recommendations for conservation and management.

The board heard from the department that five Biological Escapement Goals (BEGs) have been established for fall chum salmon throughout the drainage. The department, and in the case of two of the five goals, the United States and Canada Yukon River Joint Technical Committee, develops biological escapement goals based on the best biological information available. Most of the current BEGs are, in part, based on historical averages,

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and are in the form of a minimum number of desired spawners. The current BEG minimum numbers are thought to be less than that which produces Maximum Sustainable Yield (MSY). The board also heard from the department that, since 1993, a targeted drainagewide escapement level of 400,000 fall chum salmon was used in the management of the fisheries to increase the likelihood of achieving the individual BEGs throughout the drainage.

The department reported that a total run size of 600,000 fall chum salmon was needed to meet a 400,000 fall chum salmon drainagewide escapement level and 200,000 fall chum salmon to meet 1996 anticipated subsistence and Canadian fisheries needs.

The board heard from the department that drainagewide escapement levels of 350,000 and 375,000 fall chum salmon, given normal distribution, was sustainable but would be expected to produce a lower yield than a drainagewide escapement of 400,000 fall chum salmon, given normal distribution. The board also heard from the department that, based on the current Ricker spawner-recruit model for Yukon River fall chum salmon, a drainagewide escapement of 350,000 fish, given normal distribution, would be expected to produce a return of approximately 800,000 fall chum salmon. The board also heard that the estimated drainagewide median escapement for the years 1974 to 1995 is approximately 327,000 fall chum salmon. The board also heard from the department that the current Ricker recruit curve model suggests that a drainagewide fall chum salmon escapement level of approximately 550,000 fall chum salmon may be necessary to produce MSY.

The Alaska Constitution mandates that fishery resources be managed on the sustained yield principle. A wide range of sustainable yields are possible for salmon fisheries. The board also heard from the department that, in October 1992, each of the department's division directors signed an Escapement Goal Policy. Page 1, paragraph 4, first sentence of the policy states that:

> *"Unless otherwise directed by regulation, the department will manage Alaska's salmon fisheries, to the extent possible, for maximum sustained yield."*

However, the board does have the authority to direct the department to manage the fishery at a level that produces a sustained yield, but which is less than MSY, such as by establishing Optimal Escapement Goals. As defined by the escapement goal policy:

> *"Optimal Escapement Goal (OEG): is a specific management objective for escapement that considers biological and allocative factors. The optimal escapement goal is determined by the Alaska Board of Fisheries. The optimal escapement goal may or may not be equal to the BEG but is always sustainable."*

Lowering the drainagewide escapement level to provide for a limited subsistence fishery in those years of below average returns has both allocative and biological aspects. The allocation issue is between the needs of subsistence fishermen in any given year and those

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of the commercial fishermen. If adopted, in those years this provision is applied, it would likely decrease the allowable commercial harvest in future years, primarily four years later, when age-4 fish return. Additionally, in those years when this provision is applied, it would likely increase the possibility that subsistence restrictions may be necessary in the event of poor production. Again, the effects of the possible reduction in future returns would be felt primarily four years later. On the other hand, it would allow for some continuing level of subsistence use; a very important use for Yukon River subsistence users.

The biological aspects of this proposal, in those years enacted, would reduce the level of the drainagewide escapement. This could have several effects, including: decreasing the likelihood that year of meeting the individual BEGs established throughout the drainage; decreasing the likelihood that year of meeting the border passage objective to Canada; it could affect the Toklat River fall chum salmon stock rebuilding efforts for that year.

To provide the board some idea on how the association's proposed management plan would affect management recommendations when compared to the 1995 management plan, the department applied the association's management plan of a lower drainagewide escapement level prior to a closure of the subsistence directed chum salmon fisheries to historical run sizes estimates. The association's management plan would alter the management recommendations contained in the 1995 management plan in years when run size estimates are greater than 350,000 fall chum salmon but less than or equal to 550,000 fall chum salmon. The median run size estimate for the years 1974 through 1995 is approximately 730,000 fall chum salmon. The association's plan would have altered management actions, from those proposed in the 1995 management plan, in only 3 of the past 22 years.

The Department of Law also informed the board that, under the subsistence law, the board did not have the authority to establish a "human-food-only" fishery.

After further board discussion, with additional input from the department and the association, the board adopted a Yukon River Drainage Fall Chum Salmon Management Plan. The management plan reflects the intent that, in those years of a low return, the directed subsistence chum salmon fishery would be allowed at drainagewide fall chum salmon escapement levels of 350,000 or 375,000 prior to a total closure of the directed fall chum salmon subsistence fishery. The management plan was also amended to include a "sunset clause" of December 31, 1997. This clause would put the management plan up for review during the next regular scheduled A-Y-K board meeting during the winter of 1997/1998.

In adopting the Yukon River Drainage Fall Chum Salmon Management Plan regulation, it was the finding of the board that:

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1. The "targeted drainagewide escapement goal" is defined as that level of drainagewide escapement for which the department manages in order to increase the likelihood of achieving individual biological escapement goals throughout the drainage.

2. The Yukon River targeted drainagewide escapement goal is 400,000 fall chum salmon.

3. Yukon River drainagewide escapement levels of 350,000 and 375,000 fall chum salmon, given normal distribution, provide for sustained yield.

4. In those years that a 350,000 or 375,000 drainagewide fall chum salmon escapement level is targeted, instead of a 400,000 drainagewide fall chum salmon escapement level, the allowable fall chum salmon harvest would be expected to be less in future years, primarily four years later, when age-4 fish return.

5. Given normal production levels and distribution, a drainagewide escapement level of 350,000 or 375,000 fall chum salmon would be expected to produce sufficient fish in the return year for commercial fall chum salmon fisheries, normal subsistence harvest levels, Canadian fisheries, and a 400,000 fall chum salmon drainagewide escapement level.

6. For the historical period 1974 through 1995, only three years exist in which total fall chum salmon run size was estimated to have ranged between 350,000 and 550,000 fish.

7. The board's has to preserve and protect the subsistence fishery to a degree that has not occurred in the past.

Therefore, in managing the Yukon River fall chum salmon directed subsistence fishery, the board adopts an Optimal Escapement Goal of 350,000 fall chum salmon in years the Yukon River drainage fall chum salmon run is estimated to be greater than 350,000 fall chum salmon but less than or equal to 450,000 fall chum salmon. Additionally, in managing the Yukon River fall chum salmon directed subsistence fishery, the board adopts an Optimal Escapement Goal of 375,000 fall chum salmon in years the Yukon River drainage fall chum salmon run size is estimated to be greater than 450,000 fall chum salmon but less than or equal to 550,000 fall chum salmon.

At Wasilla, Alaska

Date: October 26, 1996

Approved: 7/0/0/0 (Yes/No/Absent/Abstain)

Larry Engel, Chair
Alaska Board of Fisheries