
HCR
18

SOCKEYE SALMON ESCAPEMENT GOALS FOR SELECTED BRISTOL BAY AREA RIVERS[1]

To: House Resources Committee Files
From: Janet Fries, Committee Aide
Date: April 3, 1985

RIVER	1982/1983	1984/1985
Kvichak	2,000,000[2]	10,000,000
Naknek	800,000	1,000,000
Igushik	150,000[3]	200,000
Wood	800,000[3]	1,000,000
Nushagak	40,000[3]	50,000
Egegik	600,000	1,000,000
Ugashik	500,000	700,000

1. Source: ADF&G Annual Bristol Bay Management Reports to the Board of Fisheries 1982 and 1984. Data presented in numbers of fish. This table is intended to present the increases in escapement goals, only. More detailed analyses of escapement goals, total run size, harvest, etc., for selected rivers can be found attached to the ADF&G letter dated March 29, 1985, in your packets.

2. This was later revised to 4,000,000 for 1982.

3. Escapements for 1983 were later revised to 1984 levels.

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER

P.O.BOX 3-2000
JUNEAU, ALASKA 99802
PHONE: (907) 465-4100

March 29, 1985

The Honorable Adelheid Herrmann
Alaska State House
Pouch V
Juneau, AK 99811

Dear Representative Herrmann:

Shortly after you introduced HCR 18, you asked the department to provide you with some information on Bristol Bay escapement goals. Enclosed are a number of items addressing those goals. The two single pages labeled APPENDIX C and the three-page letter dated May 2, 1984, were public handouts. Additionally, escapement goal revisions were discussed at the last two rounds of advisory committee meetings held throughout the bay and at the last two Board of Fisheries meetings. There was also at least one news release by Karen Lew, our Public Communications Specialist.

I believe most of the public concern relates to escapement levels identified for the Kvichak River. As you know, the Alaska Department of Fish and Game (ADF&G) has, since Statehood, managed the Kvichak as a five-year cyclic system with peak year (1960, 1965, 1970, 1975 and 1980) escapement goals of about 14 million, prepeak escapement goal of 6 million, and the 3 "off" year escapement goals of 2 million. Using this approach, the escapement goals for 1984 would have traditionally been 6 million and for 1985 would have been 14 million, totaling 20 million for the two years. However, monitoring of various biological parameters suggested that 1984 would be a very strong run to the Kvichak and that 1985 may not be of "peak-cycle" magnitude. Therefore, we proposed to the public and Board of Fisheries that we increase escapements in 1984 from 6 to 10 million and reduce escapements from 14 to 10 million in 1985. This would allow harvests on both years and provide substantial benefits to fishermen.

The 1984 run to the Kvichak was extremely strong (22.8 million) as anticipated. Our escapement was 10.5 million, which allowed a 12.3 million harvest from the Kvichak River. The 1985 forecast for the Kvichak River is still being prepared, but will probably

total 12 to 14 million, which should provide for a moderate commercial harvest with an escapement goal of 10 million, but would result in no harvest if we were to go with the more traditional 14 million escapement goal. Obtaining a 10 million escapement last year allows us to drop the 1985 escapement goal from 14 to 10 million with no net decrease in escapements for the two high production years of 1984 and 1985.

My discussion here is a rather simplified version of the many hours of consideration by myself and numerous biologists, as well as members of the public through the advisory committee and Board of Fisheries process. The enclosures should describe this matter in more detail.

Regarding House Resolution No. 18, the Bristol Bay staff would welcome public input on escapement goals for the Kvichak River in 1986 through 1988, the normal "off" cycle years in which we have a traditional escapement goal of only 2 million. Our general feeling is that this level is too low, but we have not yet analyzed the data sufficiently to make specific recommendations for increasing these escapement levels. A series of public meetings prior to this season would probably be premature. Due, however, to your assessment of lack of public understanding of escapement goals for the 1985 season, I would like to support your idea of using the public radio station KDLF to inform those members of the public who were not adequately informed through our handouts at advisory committee meetings.

Should you have any questions regarding the enclosed material or specifics as to what might be included in a radio show, please contact me.

Sincerely,

Don W. Collinsworth
Commissioner

Enclosures

STATE OF ALASKA

OFFICE OF THE GOVERNOR

BILL ANALYSIS

DEPARTMENT	DIVISION	BILL NUMBER	SPONSOR
Fish and Game	Commercial Fisheries	HCR 18	Herrmann

DEPARTMENT POSITION

Favor with amendment

PREPARED BY	DATE	COMMISSIONER'S SIGNATURE	DATE
Robert C. Clasby *RC Clasby*	3/22/85	*A Vivian Vermayer*	3/25

SUMMARY

OTHER AGENCIES AFFECTED BY BILL	CONSTITUENT GROUP(S) AFFECTED BY BILL
None	Bristol Bay Commercial Fishermen
ORGANIZATIONAL SUPPORT FOR BILL	**ORGANIZATIONAL OPPOSITION TO BILL**
Unknown	Unknown

FISCAL IMPACT: [X] NONE [ ] FISCAL NOTE ATTACHED

BACKGROUND/LEGISLATIVE INTENT

The Division of Commercial Fisheries recently started revising the spawning escapement goals for Bristol Bay salmon, which has generated some interest as to the whys and hows of the changes.

ANALYSIS OF BILL/PROGRAM EFFECTS

The resolution as written asks that we hold additional public information meetings on the revisions. As we have already done this, we feel any additional meetings would be redundant. We have no objection to continuing holding meetings for the 1986 season. For more detailed information, see the Commissioner's letter to Representative Herrman on HCR 18.

AMENDMENTS PROPOSED

Change "1985" to "1986" in line 4, page 2, of the resolution.

PLEASE ATTACH A SEPARATE SHEET FOR ADDITIONAL COMMENTS OR ANALYSIS.

01-009 (Rev. 12/83)

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

333 RASPBERRY ROAD
ANCHORAGE, ALASKA 99502
(907) 344-0541

May 2, 1984

Subject: BRISTOL BAY SOCKEYE SALMON SPAWNING ESCAPEMENT GOAL REVISIONS

From: Stephen M. Fried, Project Leader, Bristol Bay Salmon Research

The purpose of this notice is to provide a brief account and explanation of recent changes in desired spawning escapement goals for sockeye salmon stocks of the freshwater systems draining into Bristol Bay commercial fishing districts. Escapement goal changes were based upon information and recommendations from fishery scientists and managers participating in an interagency workshop held in King Salmon, Alaska, during January 1984. In attendance were ADF&G research and management staff for Bristol Bay as well as representatives from the U.S. Fish & Wildlife Service, University of Alaska (School of Fisheries, Juneau), and University of Washington (Fisheries Research Institute). Some recommendations were modified after further discussions among ADF&G Area, Regional, and Headquarters staff, and a short presentation of escapement goal revisions was presented to the Alaska Board of Fisheries during their meeting in Anchorage, February 1984. The following is a summary of findings and recommendations.

During the early 1970's disastrously low returns of sockeye salmon to Bristol Bay caused a commercial fishing industry crisis. However, since 1975, sockeye salmon runs to Bristol Bay have increased enormously. Three factors appear to be responsible for the decline and subsequent recovery: high seas fishery interceptions were substantial during the 1960's and early 1970's, but were sharply curtailed in 1974 and again In 1978; ocean temperatures were below normal during the 1960's and early 1970's, but rose to average and then above average levels begining in the mid-1970's; increased spawning escapements were allowed into systems such as the Wood, Nuyakuk and Ugashik, which had previously been subject to overfishing. To maintain current high levels of sockeye salmon production, it is necessary to continually evaluate available information and revise management practices accordingly. Review and revision of sockeye salmon spawning escapement goals is an integral part of this procedure.

To determine spawning escapement levels which result in maximum sustained sockeye salmon production, historic data (1956-1978 brood years) was used to calculate the spawner-recruitment relationships for major Bristol Bay salmon stocks (i.e. the number of returning adults produced by different numbers of spawners). This allowed optimal goals to be set for seven systems: Ugashik, Egegik, Naknek, Nuyakuk, Wood, Igushik, and Togiak (Table 1).

Insufficient information was available to warrent escapement goal revisions for three systems: Branch, Nushagak-Mulchatna, and Snake. Determination of a suitable long-term escapement goal policy for the Kvichak system, the greatest producer of sockeye salmon within Bristol Bay, awaits completion of contracted studies by investigators at University of Washington (F.R.I.). Past management of the Kvichak system has been based upon a policy of allowing cyclic escapements, rather than a single optimal level each year. Historic run size information available for this system follows a five year abundance cycle with low returns during three consecutive years (off-cycle years), a moderately high return during the fourth year (subdominant year), and the highest return during the fifth year (dominant year). In the past investigators felt that this abundance cycle was natural (i.e. inherent within the system) and set escapement goals to reflect this: a 2.0 million spawner goal for each off-cycle year, a 6.0 million spawner goal for the subdominant year, and the highest goal (8.0 million in 1965, 19.0 million in 1970, and 14.0 million in 1975 and 1980) for the dominant year . However, recent information from preliminary studies suggest that cyclic escapement goals may enhance, or actually cause, cyclic abundance patterns. Therefore, it may be possible to at least smooth out the cycle by allowing relatively high levels of escapement into the system during several consecutive years (5.0 to 10.0 million spawners per year). This would have to be accomplished over a relatively long time period, since returns during off-cycle years would be low at first. Findings of studies by University of Washington investigators will not be available for Department review until sometime this summer. However, a goal of 10.0 million spawners has been adopted for the Kvichak system for 1984 since, even if Kvichak sockeye salmon stocks do cycle naturally, there is evidence that 1984 rather than 1985 may be the dominant year within the cycle.

Table 1. Projected 1984 Bristol Bay sockeye salmon harvests based upon the pre-season forecast and revised escapement goals.

River System	Run Forecast (Millions)	Spawning Escapement Goal (Millions)	Projected Catch (Millions)
Kvichak	16.704	10.000	6.704
Branch	0.305	0.185	0.120
Naknek	2.982	1.000	1.982
Total	19.991	11.185	8.806
Egegik	3.541	1.000	2.541
Ugashik	1.916	0.700	1.216
Wood	2.666	1.000	1.666
Igushik	0.837	0.200	0.637
Nuyakuk	1.560	0.500	1.060
Nush./Mulchatna	0.152	0.050	0.102
Snake	0.017	0.040	0.000
Total	5.232	1.790	3.465
Togiak	0.453	0.150	0.303
Grand Total	31.133	14.825	16.331

APPENDIX C

NUSHAGAK DISTRICT SOCKEYE SALMON ESCAPEMENT GOAL
REVISIONS FOR 1983 AND FUTURE YEARS (May, 1983)

Historically, Nushagak district has been the second most productive system in Bristol Bay, averaging a 5.0 million sockeye salmon catch for 20 years from 1899 to 1918, 2.8 million for the following 30 years, and finally dropping to an 882,000 average in the 29 year period from 1949 to 1977 (Appendix C Figure 1). Total run statistics (catch and escapement) exhibited the same drastic decline in production. High sustained exploitation rates (up to 80%) in the early years of the fishery resulted in precipitious declines in production, and although the other districts in Bristol Bay have experienced a decline as well, it has been neither so distinct nor so drastic in nature as in Nushagak district.

In an effort to reverse the downward trend in Nushagak district sockeye production, larger escapements were provided by reduction in fishing time. The downward trend in force from the 1920's through the late 1950's were generally halted, and total run production was stabilized, but at a level well below that seen in the period of fishery development during the early 1900's.

Commencing in 1978 a remarkable transformation was experienced in Nushagak sockeye production, when 6.6 million fish returned, the largest inshore run recorded since the mid-1940's. The remarkable return in 1978 was followed by an equally strong return in 1979 (6.4 million), and in 1980 over 12.8 million sockeye returned to Nushagak district, breaking numerous long-held total run estimates, and establishing a record 8.3 million escapement to the district's river systems. Peak sockeye production continued in 1981 and 1982 when Nushagak district river systems produced total returns of 10.6 and 8.0 million fish, respectively.

Since 1978, Nushagak district's sockeye average catch production has increased to 4.9 million fish, while the total run from 1978-82 has averaged 8.9 million compared with the previous 20 year average (1958-77) of 2.3 million. The recent five year total run average of 8.9 million sockeye is higher than any previous five year average in the long history of this fishery. Although it is apparent that exceptional survival conditions have greatly aided in boosting sockeye production in the last five years, increased and consistent escapements to major contributing Nushagak district river systems appear to be essential to increased and sustained production for this fishery.

In an effort to maintain the recent high production, it will be necessary to increase sockeye escapement goals to the major river systems of Nushagak district. Without escapement goal increases, it's probable that Nushagak's sockeye runs will eventually revert back to the previous recent long-term average of 2 or 3 million fish. Accordingly, in 1983 Nushagak district escapement goals will be increased by 25% to the upper management range already in effect:

Wood River	- from	800,000 to	1.0 million
Igushik River	- from	150,000 to	200,000
Nuyakuk River	- from	250,000 to	300,000
Nushagak River	- from	40,000 to	50,000
Snake River	- from	30,000 to	40,000
Total District:		1,270,000 to	1,590,000

Additionally, sockeye escapement goal evaluations presently in progress will continue for all river systems of Bristol Bay, and the Department will present further updated escapement goal recommendations for public input at Advisory Committee meetings in the fall of 1983.

Through these adjustments to escapement goals, the Department hopes to sustain the recent high levels of salmon production in future years.

APPENDIX C

KVICHAK AND WOOD RIVER ESCAPEMENT GOAL REVISIONS, 1982

Due to excellent sockeye salmon production during the last few years and anticipated record levels of abundance in 1982, and increased biological understanding of the mechanisms influencing salmon production, an opportunity has presented itself to sustain increased runs and harvests in future years, specifically from the Kvichak - Lake Clark and Wood River systems.

The Kvichak - Lake Clark system demonstrates two stable levels of production, one at escapement levels below about 3 million spawners and the other above that number. The Department is attempting to cross this transition boundary from the lower production stability domain to the higher production stability domain by increasing the escapement goal from the typical non-peak goal of 2 million up to 4 million spawners for 1982. Recent analysis of salmon production from escapements of 4 million indicates that juvenile salmon production will increase four-fold and that an additional 5 to 10 million adults could be expected, spread over the years 1986, 1987, and 1988. The Lake Clark component of the system may be playing an important role in the 1982 salmon run. It now appears that this rumored past major salmon contributor has returned to production. A significant portion of the 1982 run is anticipated to be of Lake Clark origin and our desire is to achieve strong escapements to Lake Clark. Much of the escapement to Lake Clark is expected to come from the early portion of the run.

The Wood River system may also see an increase beyond the traditional 800,000 escapement goal, depending on age composition of the run. The larger 3-ocean sockeye tend to spawn in the short rivers connecting the Wood River Lakes while the smaller 2-ocean fish tend to spawn on lake beach areas and smaller streams. The river areas have quite limited spawning areas while the beach and small stream spawning areas are considerably more extensive. Therefore, if the salmon return has a high percentage of 3-ocean river spawners, the escapement goal would remain at 800,000, whereas, if the return had a high percentage of 2-ocean beach and stream spawners, the system could accommodate an increased number of spawners and the escapement goal would be set at 1.2 million fish. The age composition will be determined in season, as will the specific escapement goal.

Through these adjustments to escapement goals the Department hopes to increase and sustain high levels of salmon production in future years.

DELIVER TO: JPOM

ORIGINAL
SENT: 04/02/85 TIME: 17:48
FROM: LIODLG
SUBJECT: PUBLIC OPINION MESSAGE
PRINT DATE: 04/02/85 TIME: 17:48

TO: REPRESENTATIVE ADELHEID HERRMANN, CO-CH RESOURCES COMMITTEE

FROM: STOSH ANDERSON, VICE-CHAIR, NAKNEK\KVICHAK ADV.COMM.,BOX KS, LEVELOCK, ALASKA 99625, PHONE 287-3015

RE: HCR 18- BRISTOL BAY SALMON MANAGEMENT POLICIES

IT IS APPARENT THAT REASONS FOR ADF G CHANGE IN EXCAPEMENT GOALS IS NOT UNDERSTOOD BY MOST FISHERMEN AND RESIDENTS OF BRISTOL BAY. AS IMPORTANT AS THE SALMON RESOURCE IS TO OUR REGION IT IS BENEFICIAL THAT WE HAVE CONFIDENCE IN MANAGEMENT POLICIES. WITHOUT BEING BURDONSOME ON THE DEPT. ANOTHER ATTEMPT TO GET THE PLAN UNDERSTOOD WOULD BE HELPFUL.

EOM

TO: ALL LEGISLATORS

FR: MITCH KINK, A.I.F.M.A. GENERAL MANAGER
700 14TH STREET
BELLINGHAM, WA. 99825

RE: HCR 18 BRISTOL BAY SALMON MANAGEMENT

I AM THE GENERAL MANAGER OF A.I.F.M.A. COOP. WE HAVE A MEMBERSHIP OF APPROXIMATELY 400 WHICH FISH BRISTOL BAY. A.I.F.M.A. FOR YEARS HAS BEEN ADVOCATING SUCH FORUMS AS ARE ENCOMPASSED IN THIS BILL. WE FEEL THAT MEETINGS SUCH AS THIS WOULD BE ADVANTAGEOUS TO ALL FISHERMEN IN BRISTOL BAY. IT WOULD PUT ALL FISHERMEN ON AN EQUAL LEVEL AS TO THE PUBLIC SAFETY ENDORCEMENT POLICIES AND IT WOULD ADD CREDENCE TO THE DEPARTMENT OF FISH AND GAME'S POLICIES ON ESCAPEMENT AND HARVEST GOALS IN BRISTOL BAY. IT'S LONG IN COMING AND VERY MUCH NEEDED.
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DELIVER TO: JPOM

ORIGINAL
SENT: 04/02/85 TIME: 15:40
FROM: LIODLG
SUBJECT: PUBLIC OPINION MESSAGE
PRINT DATE: 04/02/85 TIME: 15:40

TO: REPRESENTATIVE ADELHEID HERRMANN

FROM: KAY LARSON, EXECUTIVE DIRECTOR BRISTOL BAY NATIVE ASSOC.,BOX 189, DILLINGHAM, ALASKA 99576-PHONE 842-5257

RE: HCR18: BRISTOL BAY SALMON MANAGEMENT POLICIES

BRISTOL BAY NATIVE ASSOC. SUPPORTS HCR 18. LOCAL SUBSISTENCE USERS AND COMMERCIAL FISHERMEN ARE NOT ADVISED OF MANAGEMENT STRATEGIES AND THEREFORE DO NOT UNDERSTAND WHEN CHANGES ARE MADE SUCH AS EXCAPEMENT GOALS BEING INCREASED. MANAGERS SHOULD EXPLAIN THEIR STRATEGIES SO THAT PEOPLE WHO ARE IMPACTED BY THEIR MANAGEMENT DECISIONS UNDERSTAND WHAT IS HAPPENING.

EOM

TO: REPRESENTATIVE ADELHEID HERRMANN

FROM: MOSES TOYUKAK, MAYOR, GEN.DEL. MANOKOTAK, ALASKA 99628, PHONE 842-5978

RE: HCR 18: BRISTOL BAY SALMON MANAGEMENT POLICIES

MANOKOTAK IS IN FULL SUPPORT OF HCR 18. THE DEPARTMENT HAS NOT FULLY INFORMED US OF THEIR DECISIONS REGARDING EXCAPEMENT GOALS AND MANAGEMENT POLICY IN THE NUSHAGAK DISTRICT.

EOM

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* DELIVER TO: JPOM
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* ORIGINAL
* SENT: 04/02/85 TIME: 17:56
* FROM: LIODLG
* SUBJECT: PUBLIC OPINION MESSAGE
* PRINT DATE: 04/02/85 TIME: 17:56
*
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TO: REPRESENTATIVE ADELHEID HERRMANN

FROM: GERALD ANELON, ILIAMNA VILLAGE COUNCIL, BOX 159, ILIAMNA, ALASKA 99606

RE: HCR 18: BRISTOL BAY SALMON MANAGEMENT POLICIES

THE ILIAMNA VILLAGE COUNCIL IS IN FULL SUPPORT OF HCR 18. PLEASE DO ALL POSSIBLE TO SEE THAT THIS RESOLUTION PASSES. THANK YOU.

EOM

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*
* DELIVER TO: JPON
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*
* ORIGINAL
* SENT: 04/02/85 TIME: 17:52
* FROM: LIODLG
* SUBJECT: PUBLIC OPINION MESSAGE
* PRINT DATE: 04/02/85 TIME: 17:52
*
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TO: REPRESENTATIVE ADELHEID HERRMANN

FROM: BETTY THOMPSON, GEN.DEL. NAKNEK, ALASKA 99633

RE: HCR 18: BRISTOL BAY SALMON MANAGEMENT POLICIES

I AM IN FULL SUPPORT OF HCR 18. IT IS IMPORTANT THAT WE UNDERSTAND WHAT IS HAPPENING.

EOM

DELIVER TO: JPOM

ORIGINAL

SENT: 04/02/85 TIME: 18:00
FROM: LIODLG
SUBJECT: PUBLIC OPINION MESSAGE
PRINT DATE: 04/02/85 TIME: 18:00

TO: REPRESENTATIVE ADELHEID HERRMANN

FROM: EDWIN ANDERSON, BOX 473, KING SALMON, ALASKA 99613 PHONE 246-3039

RE: HCR 18: BRISTOL BAY SALMON MANAGEMENT POLICIES

I FULLY SUPPORT HCR 18 ONE HUNDRED PER CENT. KEEP UP THE GOOD WORK.

EOM

DELIVER TO: JPOM

ORIGINAL
SENT: 04/02/85 TIME: 18:16
FROM: LIODLG
SUBJECT: PUBLIC OPINION MESSAGE
PRINT DATE: 04/02/85 TIME: 18:16

TO: REPRESENTATIVE ADELHEID HERRMANN

FROM: GUST BARTMAN, VILLAGE ADMINISTRATER, GEN.DEL., MANOKOTAK, ALASKA 99628, PHONE 842-5978

RE: HCR 18: BRISTOL BAY SALMON MANAGEMENT POLICIES

I AM IN SUPPORT OF HCR 18. THIS IS VERY IMPORTANT. WE NEED TO BE INFORMED OF POSSIBLE CHANGES AHEAD OF TIME.

EOM

DELIVER TO: JPOM

ORIGINAL
SENT: 04/02/85 TIME: 18:09
FROM: LIODLG
SUBJECT: PUBLIC OPINION MESSAGE
PRINT DATE: 04/02/85 TIME: 18:09

TO: REPRESENTATIVE ADELHEID HERRMANN

FROM: MOSES JOHN, COUNCIL CHAIRMAN, GEN.DEL.,MANOKOTAK, ALASKA 99628 PHONE 842-5978

RE: HCR 18: BRISTOL BAY SALMON MANAGEMENT POLICIES

I SUPPORT HCR 18. THIS RESOLUTION IF VERY IMPORTANT TO THE FISHERMEN AND PEOPLE OF BRISTOL BAY.

EOM

DELIVER TO: JPOM

ORIGINAL
SENT: 04/02/85 TIME: 18:04
FROM: LIODLG
SUBJECT: PUBLIC OPINION MESSAGE
PRINT DATE: 04/02/85 TIME: 18:04

TO: REPRESENTATIVE ADELHEID HERRMANN

FROM: HARVEY SAMUELSEN, CHAIRMAN-WESTERN ALASKA MARKETING COOP. ASSOC., BOX 18, DILLINGHAM, ALASKA 99576, PHONE 842-5591

RE: HCR 18: BRISTOL BAY SALMON MANAGEMENT POLICIES

WE ARE IN FULL SUPPORT OF HCR 18. THIS LEGISLATION IS VERY IMPORTANT AND A GREAT NECESSITY.

EOM