Kuskokwim River Salmon Management Working Group

1 (800) 315-6338 (MEET) Code: 58756# (KUSKO)
ADF&G Bethel toll free: 1 (855) 933-2433

Meeting Agenda

Date: **November 30, 2012** Time: **9:00 am** Place: **ADFG, Bethel**

Time Called to Order Chair Time Adjourned

ROLL CALL TO ESTABLISH QUORUM: **QUORUM MET? Yes / No**

Upriver Elder:
Downriver Elder:
Commercial Fisher:
Lower River Subsistence:
Middle River Subsistence:
Upper River Subsistence:
Headwaters Subsistence:
Processor:
Member at Large:
Sport Fisher:
Western Interior RAC:
Y-K Delta RAC:
ADF&G:

INTRODUCTIONS:
INVOCATION:
APPROVAL OF AGENDA:

PEOPLE TO BE HEARD:

NEW BUSINESS:

1. Recommended Kuskokwim River Escapement goals (continued discussion).
2. Alternative Kuskokwim River Salmon management plan (*Doug Molyneaux presenting and continued discussion*)

OLD BUSINESS:

1. Kuskokwim Area Board of Fish Proposals: Proposal 106
2. Report: ADF&G Chinook Salmon Symposium in Anchorage on October 22-23 (*Greg Roczicka*)
3. USFWS Information request Letter (*included in the November 3rd packet*)
4. Action items from previous meetings:
    a. Select a representative to attend the Board of Fish on behalf of the KRSMWG
    b. Working Group suggestions for improving the Kuskokwim River management plan.
    c. Discussion/approval: Bev Hoffman's letter to recruit an upriver elder (*letter distributed on September 29th and included in the November 3rd packet*).
    d. Discussion of the Iyana Gusty Award (*raised by Bob Aloysius during the August 22 meeting*).
    e. Lamont Albertson's letter in support of HB332 (*March 30 meeting*)
    f. Lamont Albertson's letter in support of USFWS participation in the KRSMWG *(March 30 meeting*)
    g. Review of KRSMWG Bylaws *Tabled until 2013*
    h. Update KRSMWG Seats (roll-call list, possible alternates) *Tabled until 2013*

COMMENTS FROM WORKING GROUP MEMBERS:
NEXT MEETING DATE:_____Time:_____Place:_____

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Information Packet

November 30, 2012

1. **Recommended Kuskokwim River Escapement Goals**

Kuskokwim River Chinook Salmon

Recommended SEG 65,000 – 120,000

Kuskokwim River Chinook salmon Escapement Goal Recommendations for 2013 BOF

System	% total escapement	Lower SEG	Upper SEG
Kuskokwim River		65,000	120,000
Kwethluk River	6.2%	4,100	7,500
Kogrukluk River	7.3%	4,800	8,800
Tuluksak River Tatlawiksuk River Takotna River			
George River	2.7%	1,800	3,300

Kuskokwim Chinook Salmon Drainage-wide Escapement Goal- *unpublished memorandum*

THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Fish and Game

DIVISIONS OF SPORT FISH & COMMERICAL FISHERIES

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MEMORANDUM

TO: John Linderman, Regional Supervisor
Division of Commercial Fisheries, Region III

Jan Conitz, Regional Research Coordinator
Division of Commercial Fisheries, Region III

Mathew Evenson, Regional Research Coordinator,
Division of Sport Fish, Region III

DATE: August 20, 2012

SUBJECT: Kuskokwim Chinook salmon drainage-wide escapement goal

FROM: Hamachan Hamazaki, Biometrician III
Division of Commercial Fisheries, Region III

Steve Fleischman, Fishery Scientist I
Division of Sport Fish,

In preparation for the 2013 Board of Fisheries meeting, the AYK escapement goal review team proposed establishment of a Biological Escapement Goal (BEG) and subsequent revision of existing tributary escapement goals for Kuskokwim River Chinook Salmon. This memo briefly describes methodology and several drainage-wide escapement goal ranges based on standard criteria. **However, these ranges are merely examples of possible goal ranges, and the Escapement Goal Team is highly encouraged to consider alternative goals based on other factors.**

Data

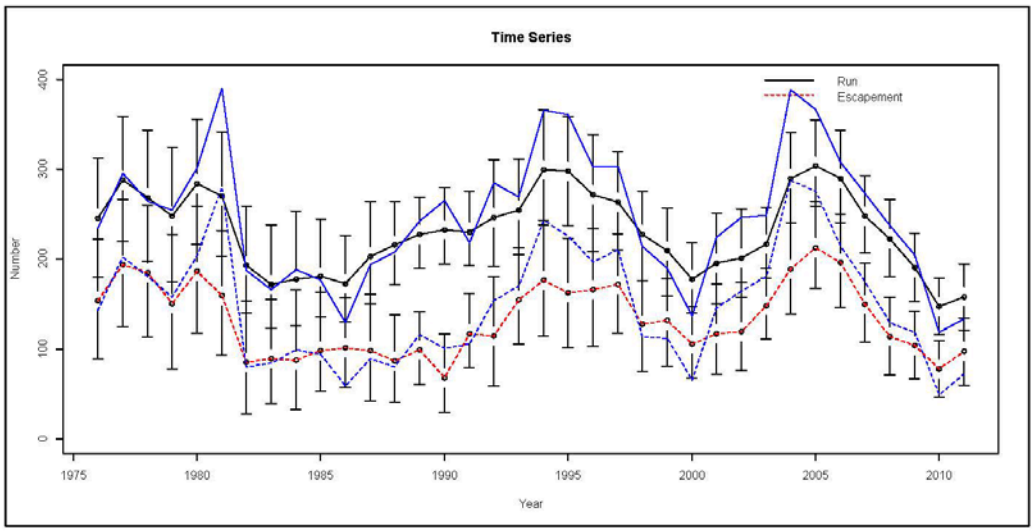
Historical (1976-2011) Kuskokwim Chinook salmon run size was modeled by combining available historical escapement, harvest, run timing, and abundance data (Schaberg et al. 2012, Bue et al. 2012). Bue et al. (2012) also reconstructed historical return by age. In this reconstruction, Bue et al. (2012) pointed out large uncertainties in the estimates of run size and age composition in some early years because of the lack of data. In the Kuskokwim River, many weir and ASL sampling projects began around 2000. Before 2000, weir escapement numeration was limited to the Kogrukluk river.

Construction of Spawner-Recruit model: Difference between Traditional and Bayesian State-Space models

In construction of Ricker spawner-recruit model, two versions are considered: traditional and Bayesian state-space models. The main difference between the two models is handling of uncertainties. The traditional model treats all data used to construct the brood table (e.g., reconstructed abundance and age composition estimates) as being observed without error, whereas the Bayesian model explicitly incorporates missing and uncertain observations in a way that preserves the age-structured relationships between these quantities. Because historical run size and age-composition of the Kuskokwim Chinook salmon were estimated from incomplete data sources, the Bayesian state-space model is more appropriate for this application.

Results of Bayesian State-Space model

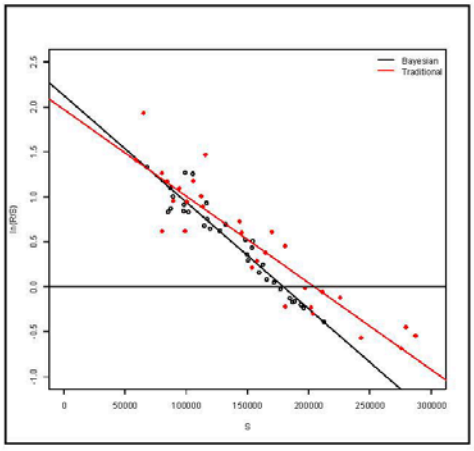
In the Bayesian statistical framework, current information (from the "posterior" distribution) about uncertain quantities depends on the context ("prior information"). Compared to raw estimates from the run reconstruction, Bayesian posterior estimates of total run in the context of the Ricker SR model "shrank" toward the global mean (i.e., annual fluctuation was reduced; Figure 1). This amounts to implicit acknowledgement that some of the observed variation in run size estimates is due to observation error. Mean run size of reconstructed data was 246,833 (CV 30%), whereas those from Bayesian model were 230,927 with CV 19%. A further consequence of considering the reconstructed estimates in the context of a spawner recruit model is that escapement estimates were reduced in magnitude. Mean escapement of reconstructed data was 149,340 with CV 44% and range 49,073-287,178, whereas those from Bayesian model were 133,103 with CV 30% and range 68,089-212,576. Median escapement was 144,326 for reconstructed and 123,236 for Bayesian.



Page 2

Figure 1. Comparison of total run and escapement, between original raw data (blue line) and Bayesian (black and red).

This resulted in higher estimates of ln(alpha) and beta than from the traditional model (Figure 2, Table 1), shifting the estimated Ricker spawner-recruit model toward the left (Figure 3).



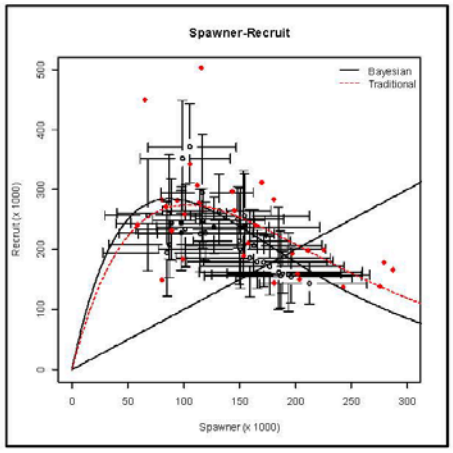


Figure 2 (left) . Comparison of traditional (red) and Bayesian (black) spawner –recruit relationship.
Figure 3 (right) . Comparison of traditional (red) and Bayesian (black) spawner –recruit relationship.

Median S_{msy} of the Bayesian model was 64,515 (95%: CI 53,290-81,371), about 10,000 fish lower than that of traditional 74,801 (95%: CI 69,116-82,700; Table 1). On the other hand, uncertainty about the estimates was greater for the Bayesian analysis than that estimated from the traditional model.

Table 1. Kuskokwim BEG: Comparison of Traditional and Bayesian State-Space Spawner-Recruit model results. Numbers in parenthesis indicate upper and lower 95% Confidence (Traditional) / Credible (Bayesian) bounds.

Scenario	Alpha	Beta (10^{-5})	Phi (sd)	S_{msy}	S_{max}	S_{eq}
Bayesian State-Space	8.16 (4.75, 12.97)	1.15 (0.79, 1.49)	0.253 (-0.717, 0.934)	64515 (53290, 81371)	86615 (67289, 126400)	184300 (162300, 225500)
Traditional	7.21 (5.60, 9.28)	0.97 (0.82, 1.11)		74801 (69116, 82700)	103479 (89831, 121233)	204912 (199687, 217762)

Several alternative assumptions were considered, such as greater uncertainty in harvests, and age composition; and incorporating age-specific harvest rates. However, estimates from the alternative configurations were similar to current model, and thus are not presented here.

Drainage-wide Biological Escapement Goal Ranges

For setting a Kuskokwim drainage-wide escapement goal, two standard goal criteria were considered, based on maximizing sustained yield (MSY) and production (R_{max}). From those, two scenarios were considered: 1) achieving 90% of MSY/R_{max} more than 90% of time, 2) achieving 90% of MSY/R_{max} more than 80% of time. (Table 2, Figures 4,5)

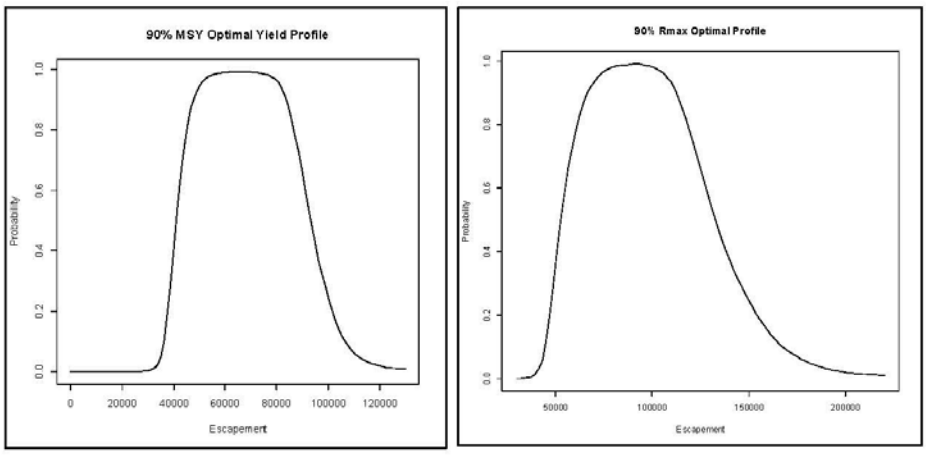


Figure 5 (left) Optimal 90% MSY yield profile.
Figure 6 (right) Optimal 90% Rmax profile

Table 2. Proposed drainage wide escapement goals between Bayesian and Traditional spawner-recruit models.

	90% MSY >90%	90% MSY >80%	90% R_{max} >90%	90% R_{max} >80%
Bayesian	46800-84500	45500-85800	66100-111700	62300-117400
Traditional	51000-102000	49500-104000	69500-145000	67500-148000

Based on optimum yield curve, escapement goal range of MSY based is 46,800 – 84,500, and that of R_{max} based is 66,100 – 111,700 (Table 2). Escapement goals based on Traditional model was similar but slightly higher and wider range. With all the above goals, there is greater than

95% probability that the expected yield is at least 100,000 (Figure 7). It should again be noted that the BEG ranges presented above are merely examples. The Escapement Goal Team is strongly encouraged to consider alternative goals based on other factors.

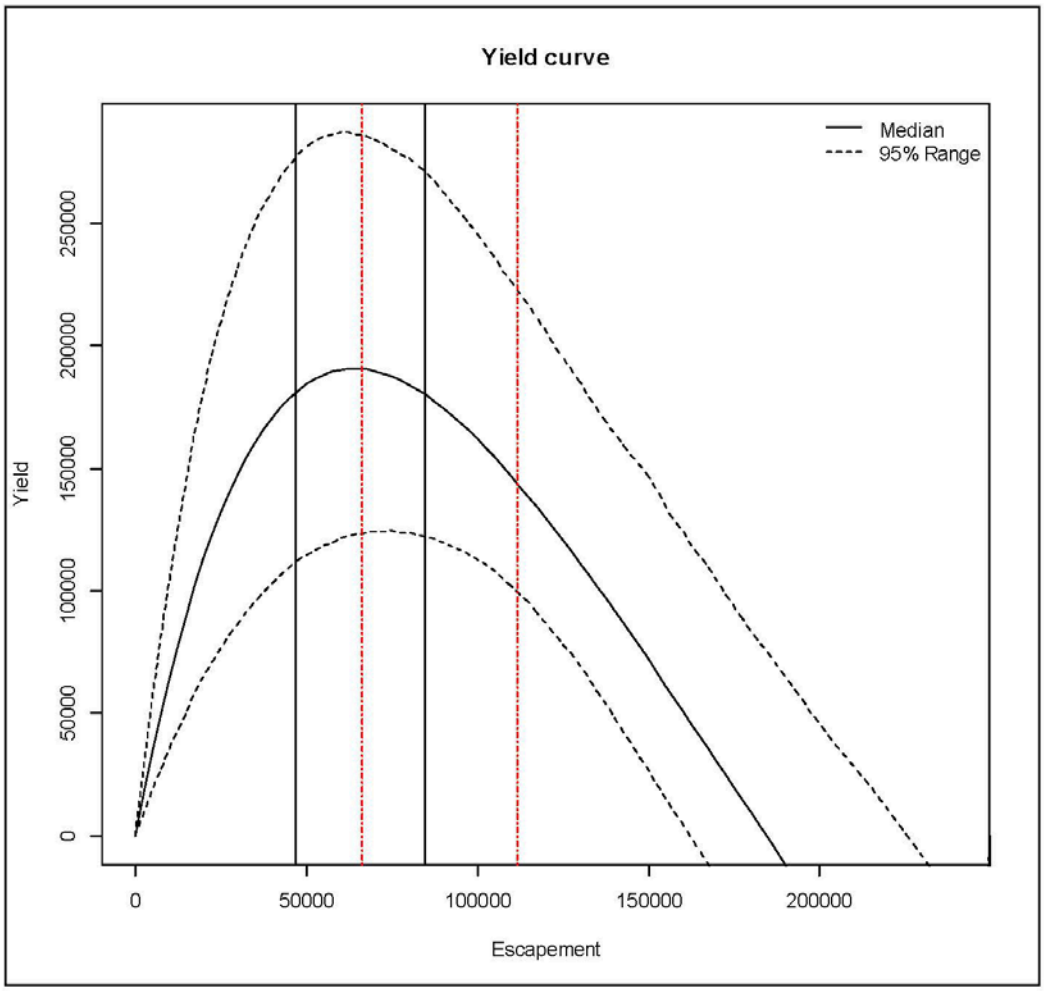


Figure 7. Yield curve with 90%MSY (black) and 90% R_{max} (Red) based escapement goal ranges.

2. Alternative Kuskokwim River Salmon Management plan (*Doug Molyneaux*)

Final DRAFT for Discussion Purposes.

NOTE: What is listed below should not be viewed as "consensus" among the committee members, it is just the an attempt to incorporate the many concerns and suggestions committee member and public have made. It is presented here for discussion purposes.

Conventions:

- **Black Font = original regulation narrative and changes described in Proposal 105.**
- **Blue Font = alternative narrative suggested through collaboration of committee participants and other public input.**
- **[TEXT IN ALL CAPS] to be deleted**
- **Text in bold and underscore to be added**
- ***Red Italicized Font: Areas of disagreement***

PROPOSAL 105 (alternative) – 5 AAC 07.365. Kuskokwim River Salmon Management Plan. Update and clarify *Kuskokwim River Salmon Rebuilding Management Plan* and strategies as follows:

5 AAC 07.365. Kuskokwim River Salmon Management Plan.

(a) The purpose of this management plan is to provide guidelines for [THE REBUILDING AND] management of the Kuskokwim River salmon fishery that **are expected to** [WILL] result in the sustained yield of salmon stocks large enough to meet [THE]escapement goals, amounts necessary for subsistence **(ANS)**, and for nonsubsistence fisheries. **The department shall use the best available data, including preseason and inseason run projections, test fishing indices, age and sex composition, subsistence and commercial harvest reports, and passage estimates from escapement monitoring projects to assess run abundance for the purpose of implementing this plan. Furthermore, in acknowledging the limited accuracy of inseason tools, managers will use these inseason tools to actively target the *mid-point of the* escapement goal ranges knowing this approach will result in heighten probability for final escapements to be somewhere within the escapement goal range.**

(b) It is the intent of the Board of Fisheries that the Kuskokwim River salmon stocks shall be managed [~~DURING JUNE AND JULY~~] in a conservative manner consistent with the Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222) **to meet escapement goals** and the subsistence priority.

(c) In the subsistence fishery, **occurring within** the Kuskokwim River drainage**, including** waters of the mainstem of the river and other salmon spawning tributaries, unless otherwise specified by the department,

(1) the subsistence salmon net and fish wheel fisheries will be open **seven** [FOR FOUR CONSECUTIVE] days per week [IN JUNE AND JULY AS ANNOUNCED BY EMERGENCY ORDER]; however, the commissioner may alter fishing periods by emergency order,

1

Comment [dbm1]:
The management plan is organized into 3 parts:
1. General Provisions under (a) and (b)
2. "in the subsistence fishery… under (c)
3. "in the commercial fishery… under (d)

Comment [dbm2]:
- The term "ANS" is used when reference to an established number of fish is intended; i.e., as can be used when considering issues such as pre-season outlooks or inseason run projections (i.e., an number of fish needed beyond escapement).
- The term "reasonable subsistence opportunity" is used when the intent to reference management actions (time/area/and gear) to allow access for subsistence fishermen to harvest within the ANS range.

Comment [dbm3]: Language is consistent with Yukon Area management plans (5 AAC 05.360 (king), 05.362 (summer chum), 01.249 (fall chum), and 05.369 (coho)).

Comment [dbm4]:
- Intent is acknowledgment of limited accuracy of inseason management tools; i.e., if you want to hit somewhere within the target, then you should aim for the bulls eye (mid-point). If inseason run projections (as best they can be made) indicated final escapement will fall below the midpoint of the escapement goal range, then managers will initiate corrective measures to improve the final projection such as reducing the commercial fishing effort (fishing time and area), and if needed reducing subsistence effort (time, area, gear). Future year adjustments to the inseason target may be needed if it is found that the inseason "aim" tends to be consistently "low" or "high".

- Disagreement on inseason management actions that target the "mid-point" of escapement goals in order to ultimately achieve final escapements that are distributed within and throughout the escapement goal ranges.

[CONSISTENT WITH MIGRATORY TIMING AS THE SALMON RUNS PROGRESS UPSTREAM,] based on run [STRENGTH] **abundance,** [AND] **in order** to achieve escapement goals.

(A) **if the pre-season outlook for king salmon abundance is less than is required to achieve the *mid-point of the* drainage-wide escapement goal and the mid-point of ANS, then by emergency order the subsistence salmon fishery will be restricted beginning June 1 *to a minimum of one subsistence fishing period per week, with no more than 7 days between fishing periods,* until inseason tools allow for better resolution of actual run abundance; furthermore, to the degree practicable, weather should be considered in the timing of subsistence openings to better assure reasonable conditions to harvest and process fish.**

(2) during subsistence **salmon fishing** closures **announced by emergency order,** [OF THREE CONSECUTIVE DAYS PER WEEK IN JUNE AND JULY,] all salmon nets with a mesh size larger than four inches must be removed from the water, and fish wheels may not be operated **unless:**

(A) a fish wheel used to take fish is equipped with a livebox that is constructed so that it contains no less than 45 cubic feet of water volume while it is in operation;

(B) the live box of a fish wheel must be checked at least once every six hours while the fish wheel is in operation, and all salmon of the species specified by emergency order must be returned alive to the water.

(x) If the commissioner determines that king salmon abundance is projected to be inadequate to achieve the drainage-wide escapement goal and ANS, but that there is a harvestable surplus of salmon species other than king salmon sufficient to provide for escapement needs and a reasonable opportunity for subsistence, then the commissioner will to the extent practicable provide by emergency order *a minimum of one subsistence fishing period per week with no more than 7 days between open periods* and *with gillnet mesh size restricted to 6 inches or smaller* to allow for limited subsistence salmon harvest:

In addition, these restrictions may be applied to the entire Kuskokwim River, consistent with migratory timing as the salmon runs progress upstream, or they may be applied to specific sections of the mainstem Kuskokwim River or individual tributaries in need for targeted measures to achieve escapement goals

[HOWEVER, THE COMMISSIONER MAY ALTER FISHING PERIODS BY EMERGENCY ORDER BASED ON RUN STRENGTH AND TO ACHIEVE ESCAPEMENT GOALS;]

(3) **repealed.** [AS THE SALMON RUN PROGRESSES UPSTREAM FROM DISTRICTS 1 - 2, AND FURTHER UPSTREAM, THE PROVISIONS OF (1) OF THIS SECTION WILL BE IMPLEMENTED IN THE MAINSTEM OF THE KUSKOKWIM RIVER AND SALMON SPAWNING TRIBUTARIES;]

(4) the commissioner my alter the subsistence hook and line bag and possession limits specified in 5 AAC 01.295 by emergency order if the commissioner determines that inseason **[INDICATORS] information** indicate it is necessary for conservation purposes.

(d) In the commercial fishery,

Comment [dbm5]:
- Intent is to assure some minimum early season subsistence fishing opportunity even when the king run is expected to be low, and that managers attempt to time subsistence openings to conditions that minimize likelihood of spoilage / waste (NOTE: most subsistence caught salmon are processed via open air drying. Rainy conditions heighten likelihood of spoilage).
- Provision seeks to provide means to bolster escapements when king run is projected to be low, but recognizes limited accuracy of pre-season forecasts and early season tools for assessing run abundance. (NOTE: "better resolution" is expected to occur around 24 June.)
- Consistent with the "conservative manner" under (b) and the uncertainty provision of 5 AAC39.222 (Policy for the Management of Sustainable Salmon Fisheries).
- ***Disagreement on allowing some minimum early-season subsistence opportunity.***

Comment [dbm6]:
- Intent is to make more obvious provisions described in 5 AAC 01.270 (m)(2) for king salmon and 5 AAC 01.270 (n)(2) chum salmon.
- ***Disagreement on including fishwheel language in mgt. plan because it already appears elsewhere in regulation as noted above.***

Comment [dbm7]:
- Intent is to provide some minimum late-season subsistence fishing opportunity; if kings are the species of conservation concern, then allowing a means for subsistence opportunity on other salmon species through the use gillnets with 6 inch or smaller mesh size.
- ***Disagreement on allowing some minimum late-season subsistence opportunity intended to target species other than king salmon.***
- ***Disagreement on including language about allowing 6 inch or smaller mesh size in mgt. plan because it already appears elsewhere in regulation.***

Comment [dbm8]: Intent is to emphasize management flexibility to use area closures to target specific tributaries where low escapement is a concern while still allowing unrestricted or less restrictive subsistence opportunity elsewhere in the area.

(1) guideline harvest levels are:

(A) 0-50,000 king salmon, and .

(B) 0-50,000 sockeye salmon;

(2) [ONLY THOSE WATERS OF DISTRICT 1 [DOWNSTREAM OF THE ADF&G REGULATORY MARKERS LOCATED AT BETHEL] MAY BE OPENED DURING THE FIRST COMMERCIAL SALMON FISHING PERIOD;]

(3) **if in inseason information indicates that run abundance are sufficient for escapement and amounts reasonably necessary for subsistence (ANS)** the commissioner shall open and close the Kuskokwim River commercial salmon fishery by emergency order **within the following constraints:** [IF INSEASON INDICATORS OF RUN STRENGTH INDICATE A RUN STRENGTH THAT IS LARGE ENOUGH TO PROVIDE FOR A HARVESTABLE SURPLUS AND A REASONABLE OPPORTUNITY FOR SUBSISTENCE USES AND FOR NONSUBSISTENCE FISHERIES, THE SUBSISTENCE FISHING SHALL REVERT TO THE FISHING PERIODS AS SPECIFIED IN 5 AAC 01.260;]

(A) the first opening may not occur until after June 23 unless inseason tools clearly indicate that king salmon abundance levels are adequate to exceed the *mid-point of the* drainage-wide escapement goal and to exceed mid-point of ANS;

(B) only those water of Subdistrict 1-B may be opened during the first commercial fishing period unless inseason tools clearly indicate that king salmon abundance levels are adequate to exceed the *mid-point of the* drainage-wide escapement goal and to exceed the mid-point of ANS;

(C) 3 days (72 hours) must pass between the first Subdistrict 1-B (below Bethel) opening and the first Subdistrict 1-A (above Bethel) opening unless inseason tools clearly indicate that king salmon abundance levels are adequate to exceed the *mid-point of the* drainage-wide escapement goal and to exceed mid-point of ANS;

(D) the department shall provide, to the extent practicable, at least 24 hours advance notice of the opening of Districts 1 and 2 to commercial fishing periods;

(E) Districts 1 and 2 commercial fishing periods are from 12:00 [1:00] p.m. through 6:00 [7:00] p.m.; when longer fishing periods are allowed, the extra time is to be divided before 12:00 [1:00] p.m. and after 6:00 [7:00] p.m.;

(F) *and gillnet mesh size is not to exceed 6-inches.*

[(4) THE DEPARTMENT SHALL PROVIDE, TO THE EXTENT PRACTICABLE, AT LEAST 24 HOURS ADVANCE NOTICE OF THE OPENING OF DISTRICTS 1 AND 2 TO COMMERCIAL FISHING PERIODS;]

[(5) DISTRICTS 1 AND 2 COMMERCIAL FISHING PERIODS ARE FROM **12:00** [1:00] P.M. THROUGH **6:00** [7:00] P.M.; WHEN LONGER FISHING PERIODS ARE ALLOWED, THE EXTRA TIME IS TO BE DIVIDED BEFORE **12:00** [1:00] P.M. AND AFTER **6:00** [7:00] P.M.;]

(6) [IN JUNE,] [AND UNTIL COHO SALMON RELATIVE ABUNDANCE EXCEEDS] **when** chum salmon relative abundance **exceeds king salmon relative abundance**, the department shall manage, to the extent practicable, the commercial salmon fishery based on the chum salmon run [STRENGTH] **abundance and within the constraints listed above; however,]**

(A) if king salmon abundance is projected to be inadequate to achieve the drainage-wide escapement goal and ANS, and if the commissioner determines that there is

Comment [dbm9]:
• Housekeeping: intent is to consolidate and make more obvious the guideline harvest levels currently in effect.

Comment [dbm10]:
• Intent is to account for uncertainty with inseason assessment tools, especially early in the season.
• 22 June has been cited by ADF&G staff as the earliest date by which the BTF (Bethel Test Fishery) could be expected to reasonably project end-of-season escapement (average 50% king passage point in the BTF). These data become available for management consideration early on 23 June, which is the earliest date a decision could be made. Adding the required 24 hour notice, the earliest date for the first commercial fishing period is 24 June (average 59% passage point at BTF).
• Provides for management flexibility by allowing for earlier openings should early season tools clearly indicate a strong king run.

Comment [dbm11]:
• Intent is to provide a safeguard for reasonable subsistence opportunity upstream of Bethel in terms of access to adequate salmon abundance that would provide a normally diligent participant with a reasonable expectation of successful harvest. The benchmark for "reasonable expectation" is collective harvest within ANS and obtain ...

Comment [dbm12]:
• Intent is to provide a safeguard for king salmon escapement and reasonable subsistence opportunity to harvest king salmon, as described above, by avoiding double harvesting on a block of fish. The provision aims mostly at allowing fish to pa ...

Comment [dbm13]:
• Intent is to be consistent with the current Proposal 105. Location was moved to allow for adding preceding provisions.

Comment [dbm14]:
• Intent is to be consistent with the current Proposal 105. Location was moved to allow for adding preceding provisions

Comment [dbm15]:
• Intent is to be consistent with Proposal 110 should the BOF adopt it (i.e., repeal of 5 AAC 07.331 (c):
"…, *except that in district 1, the commissioner may open fishing periods during which the gillnet mesh size may be no greater than eight inches*" recognizing: ...

Comment [dbm16]: Added to emphasize constraints and to avoid potentially conflicting interpretation because chum salmon "relative abundance" typically exceeds king salmon relative abundance by mid-June simply because chum are far more abundant in the Kuskokwim River (average total run size around 1.8 millio ...

a harvestable surplus of chum salmon sufficient to provide for escapement needs and a reasonable opportunity for subsistence, then the commissioner may, by emergency order, open a directed commercial chum salmon fishery and the department shall manage to the extent practicable, the commercial chum salmon fishery to harvest fewer than *1,000* king salmon for the season; furthermore,

[(7) THE GUIDELINE HARVEST LEVEL FOR SOCKEYE SALMON IS 0-50,000 FISH (*moved to under (1) or repeal*]

(8) [WHEN CHUM SALMON ABUNDANCE IS SUFFICIENT TO PROVIDE FOR ESCAPEMENT AND SUBSISTENCE NEEDS, AND] when coho salmon relative abundance exceeds chum salmon relative abundance, the department shall manage, to the extent practicable, the commercial salmon fishery based on the strength of the coho salmon run; **however,**

(A) if chum salmon abundance is projected to be inadequate to achieve escapement goals and to provide for ANS, and if the commissioner determines that there is a harvestable surplus of coho salmon sufficient to provide for escapement needs and a reasonable opportunity for subsistence, then the commissioner may, by emergency order, open a directed commercial coho salmon fishery and the department shall manage to the extent practicable, the commercial coho salmon fishery to harvest fewer than *4,000* chum salmon for the season.

(9) **repealed.** [WHEN THE CHUM SALMON RUN IS PROJECTED TO BE INADEQUATE TO MEET ESCAPEMENT AND SUBSISTENCE NEEDS, THE DEPARTMENT SHALL MANAGE THE COMMERCIAL COHO SALMON FISHERY TO MINIMIZE THE INCIDENTAL HARVEST OF CHUM SALMON AND TO PROVIDE FOR COHO SALMON ESCAPEMENT AND SUBSISTENCE NEEDS;]

(10) a person may not sell salmon roe taken in Districts 1 and 2.

[(11) IF THE KING SALMON RUN IS PROJECTED TO BE INADEQUATE TO MEET ESCAPEMENT GOALS AND TO PROVIDE FOR A REASONABLE SUBSISTENCE OPPORTUNITY, AND IF THE COMMISSIONER DETERMINES THAT THERE IS A HARVESTABLE SURPLUS OF CHUM SALMON SUFFICIENT TO PROVIDE FOR ESCAPEMENT NEEDS AND A REASONABLE OPPORTUNITY FOR SUBSISTENCE, THE COMMISSIONER MAY, BY EMERGENCY ORDER, OPEN A DIRECTED CHUM SALMON FISHERY AND THE DEPARTMENT SHALL MANAGE TO THE EXTENT PRACTICAL, THE COMMERCIAL CHUM SALMON FISHERY TO MINIMIZE THE HARVEST OF KING SALMON.]

ISSUE: This proposal requests changes to the Kuskokwim River management plan to better reflect current management practices, and provide greater flexibility during periods of conservation need for salmon in order to meet escapement, provide for subsistence opportunity, and manage overlapping **runs of multiple salmon species.** The proposal would also allow for the opportunity to commercially harvest **king,** chum**, sockeye, and coho** salmon when abundance is beyond what is necessary for escapement and **ANS**.

In January 2001, the Alaska Board of Fisheries modified the *Kuskokwim River Salmon Rebuilding Management Plan* to provide guidelines for management of subsistence, commercial, and sport fisheries for Kuskokwim River salmon. Management of the Kuskokwim River salmon

Comment [dbm17]:
- Intent is to provide management flexibility to allow for commercial chum fishing when kings are weak, but still cause negligible impact to overall king escapement.
- 1,000 King is <1% of smallest total Chinook run on record; effectively limits start of commercial chum fishing to after 7 July (average 90% Chinook passage point in BTF).
- Opted against adding a provision to prohibit sale of incidental kings for 3 reasons:

1. Incidental harvest occurs after most subsistence harvest is completed so fishers may not wanted the kings as is common in Yukon Y1. Requiring processor to distribute unwanted kings could be problematic.
2. Allowing sale would provide better accounting of actual incidental king harvest.
3. The prohibition of sale is still possible outside the mgt. plan if conditions and interest allow.

- ***Disagreement on specifying 1,000 kings as opposed to "negligible kings"***

Comment [dbm18]: Housekeeping to consolidate listings of guideline harvest levels.

Comment [dbm19]:
- Intent is to allow for commercial coho fishing when chum are weak, but still cause negligible impact to overall chum escapement.
- 4,000 is approx. 1% of lowest year on record per Bue et al. 2008 estimates (FDS 08-64; 1988-2007); effectively limits start of commercial coho fishing to after 1 Aug (average 98% chum passage point in BTF)
- ***Disagreement on specifying 4,000 chum as opposed to "negligible chum"***

Comment [dbm20]: Changed language above from "provide for a reasonable subsistence opportunity" to "provide for ANS" because the concept of "reasonable opportunity" is a relatively vague concept and implies a provision of time rather than a provision of adequate numbers of fish. In contrast, ANS is a measurable number of fish that can be incorporated into management actions and considered in context to pre-season outlooks and inseason projections.

fishery is complex due to overlapping multi-species salmon runs, and concurrent subsistence and commercial fisheries. Salmon fishery management has been very conservative as demonstrated by closure of the commercial fishery unless king and chum salmon run strength are clearly adequate to provide for escapement and subsistence needs. The purpose of the management plan is to provide guidelines for management of the Kuskokwim River salmon fishery **that seek to provide** sustained yield of salmon stocks large enough to meet escapement goals, **ANS**, and harvests for fisheries other than subsistence.

A pre-defined subsistence fishing schedule was established within the original plan, but is not necessary every year. If subsistence closures are established, the department needs flexibility in the duration of the closure and the ability to progressively implement such closures upstream as salmon migrate through the system.

Commercial fishing throughout most of the 2000s was limited by stock of concern designations for king and chum salmon, poor market conditions for chum salmon, limited processing capacity, and low effort. Market conditions for chum salmon have improved in recent years; however, the fishery is still limited by processing capacity and low effort. Given record king, chum, and sockeye salmon escapements observed from 2004 to 2006, large surpluses of these species were available for commercial harvest, but were underexploited given the conditions listed above. Returns of king salmon from these record escapements have produced poor returns in recent years. Measures taken to conserve king salmon have resulted in forgone commercial chum salmon harvest and these fish continue to be underexploited despite available harvestable surpluses beyond escapement and subsistence needs. Managing for overlapping salmon species based upon abundance, while minimizing the harvest of a less abundant species to the extent practical will benefit resource users.

WHAT WILL HAPPEN IF NOTHING IS DONE? The existing plan does not reflect current management practices and provides less flexibility in management of overlapping salmon runs than the proposed plan. More flexibility will ensure Kuskokwim River salmon runs are managed for sustained yield **across all species**.

WILL THE QUALITY OF THE RESOURCE HARVESTED OR PRODUCTS PRODUCED BE IMPROVED? No, **however, greater flexibility will allow managers, in collaboration with groups like the Kuskokwim Salmon Management Working Group, to implement measures that are expected to provide sustainable yields of all species within the Kuskokwim River drainage.**

WHO IS LIKELY TO BENEFIT? **The long-term sustainability of** the resource and **both subsistence and commercial** fishermen.

WHO IS LIKELY TO SUFFER? [NO ONE.] **Subsistence fishermen and their families, particularly those who fish upstream of Bethel. The Bethel Test Fishery is the primary more information source for inseason management decisions and is the basis for inseason projections to estimate total escapement. With a drainage wide goal as low as ADF&G is proposing, if ADF&G actively seeks to manage to those escapement levels, then they are very likely to allow commercial fishing to either target kings or to allow a more liberal**

incidental commercial harvest of kings. Given the current nature of the commercial fishery, most of the commercial effort will likely be "below" Bethel (W1-B). As a consequence, there will be low passage of kings upstream of Bethel, much lower than upstream subsistence fisherman have had available to them historically, so they will need to put much more effort into fishing in order to get their normal harvest of kings. The historical average escapement is 150K kings, which is an index of the abundance of kings available to subsistence fishermen upstream of Bethel. But the ADF&G escapement goal is only 65-120K kings, and managing to be within that goal will result in much lower Chinook abundance upstream of Bethel than upstream subsistence fishermen typically have had available to them.

OTHER SOLUTIONS CONSIDERED? [NONE.] **ADF&G Proposal 105, which was developed without input from outside ADF&G**

PROPOSED BY: ADF&G, KRSMWG, USFWS

Kuskokwim River Salmon Management Plan, *an Alternative*

- BOF Proposals 105 (ADF&G)
- BOF Proposals 106 (AVCP)

by
Doug Molyneaux
on behalf of
ONC
and
Kuskokwim River Salmon Management Working Group

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Management Plan Development

- ADF&G Version of Mgt. Plan: Proposal 105
- AVCP Placeholder Mgt. Plan: Proposal 106
- Charge from Greg R.: Develop an alternative management plan to Proposal 105 that can be presented to the BOF in January and implemented in time for the 2013 fishing season.

Management Plan Development

"Guidance Committee"

Working Group

- Casie Stockdale
- Dave Cannon
- Ray Collins
- *Greg Roczicka*
- *LaMont Albertson*
- *Others*

USFWS

- Dan Gillikan
- Steve Miller
- *Others*

ADF&G

- Travis Ellison
- Kevin Schaberg
- *John Linderman*
- *Others*

Meetings:

- October 9 - Inception
- October 16 – Guidance Committee, info gathering
- October 29 – Guidance Committee, draft 01 review, info gathering
- Nov 2-3 – LKAC and Full WG, intro, draft review , info gathering
- Nov 5-9 – Middle Kusko intro, draft review , info gathering via Mike Thalhauser
- Nov 28 – Guidance Committee, draft 02 review, info gathering
- Nov 29 – Guidance Committee, discussion of contentious items
- Nov 30 – Full Working Group review
- Jan – BOF submission

Management Plan Development

- Start point: Proposal 105
- Alternative Plan is in final draft. Following are highlights:

Conventions:

- **Black Font = original regulation narrative and changes described in Proposal 105.**
- **Blue Font = alternative narrative suggested through collaboration of committee participants and other public input.**
- **[TEXT IN ALL CAPS] to be deleted**
- **Text in bold and underscore to be added**
- ***Red Italicized Font: Areas of disagreement***

Management Plan Development

(d) In the commercial fishery,

(3) **if in inseason information indicates run abundance sufficient for escapement and amounts reasonably necessary for subsistence (ANS)** the commissioner shall open and close the Kuskokwim River commercial salmon fishery by emergency order **within the following parameters:**

Management Plan Development

(d) In the commercial fishery,…

(A) the first opening may not occur until after June 23 unless inseason tools clearly indicate that king salmon abundance levels are adequate to exceed the *mid-point of the* drainage-wide escapement goal and to exceed mid-point of ANS;

- Intent is to account for uncertainty with inseason tools, especially early in the season.
- 22 June is cited by ADF&G staff as the earliest date by which the BTF could be expected to reasonably project end-of-season escapement (average 50% king passage point BTF) , these data are available early on 23 June for management consideration, plus need to allow 24 hours of notice before opening, so earliest first CFP could not occur until 24 June (average 59% passage point at BTF) .
- Provides for management flexibility by allowing for earlier openings should early season indicators clearly show a strong king run.
- ***Disagreement on inseason management actions that target the "mid-point" of escapement goals in order to ultimately achieve final escapements that are distributed within and throughout the escapement goal ranges.***

Management Plan Development

(d) In the commercial fishery,…

(B) only those water of Subdistrict 1-B may be opened during the first commercial fishing period unless inseason projections clearly indicate kings salmon abundance adequate to exceed the *mid-point of the* drainage-wide escapement goal and to exceed the mid-point of ANS;

- Intent is to provide a safeguard for subsistence fishermen upstream of Bethel that allows for access to adequate salmon abundance (per definition for *reasonable subsistence opportunity*).
- Accounts for uncertainty with inseason assessment tools, especially early in the season.
- Provides for management flexibility if abundance is exceptionally high and/or processor availability only allows a Subdistrict 1-A opening.

Management Plan Development

(d) In the commercial fishery,…

(C) 3 days (72 hours) must pass between the first Subdistrict 1-B (below Bethel) opening and the first Subdistrict 1-A (above Bethel) opening unless inseason indicators clearly project king salmon abundance adequate to exceed the *mid-point of the* drainage-wide escapement goal and to exceed the mid-point ofANS;

- Intent is to provide a safeguard for escapement and ANS by avoiding double harvesting on a block of fish, mostly by allowing fish to pass out of statistical areas 335-12 and 335-13 (high effort areas).
- If first 1B opening is on 24 June (earliest date), then earliest 1A opening would be 27 June (king passage at BTF average 69%).
- Accounts for uncertainty with inseason assessment tools, especially early in the season.
- Provides for management flexibility if abundance is exceptionally high warrants commercial harvest.

Management Plan Development

(d) In the commercial fishery,…

(F) and gillnet mesh size is not to exceed 6-inches.

- Intent is to be consistent with Proposal 110 should the BOF adopt it (repeal of 5 AAC 07.331 (c) allowing up to 8-inch mesh recognizing:
  1) regional move away 8-inch (Yukon)
  2) competes with current subsistence harvest using 8-inch mesh, which targets discreet subset of king population.
  3) adding commercial use of 8-inch on top of existing prevalence of 8-inch in the subsistence fishery results in disproportionately high exploitation of large kings (mix of males and females) and disproportionately low exploitation on small king (males); which skews escapement toward high ratio of males (esp. small males) to females, and long-term concerns about selective harvest as cause for kings getting smaller.
- ***Disagreement on including because it is a separate BOF proposal (Proposal 110).***

Management Plan Development

(d) In the commercial fishery,…

(A) if king abundance is projected to be inadequate to achieve the drainage-wide escapement goal and ANS, and if the commissioner determines that there is a harvestable surplus of chum sufficient to provide for escapement needs and a reasonable opportunity for subsistence, then the commissioner may… open a directed chum fishery and the department shall manage the commercial chum fishery to harvest fewer than *1,000* kings for the season.

- Intent is to allow for commercial chum fishing when kings are weak, but still limit harm to the king escapement.
- 1,000 Chinook is <1% of smallest total Chinook run on record; effectively limits start of commercial chum fishing to after 7 July (average 90% Chinook passage point in BTF).
- Omitted provision to prohibit sale of incidental kings for 3 reasons:
  1. Incidental harvest occurs after most subsistence harvest is completed so fishers may not wanted the kings as is common in Yukon Y1. Requiring processor to distribute unwanted kings could be problematic.
  2. Allowing sale would provide better accounting of actual incidental king harvest.
  3. The prohibition of sale is still possible outside the mgt. plan if conditions and interest allow.
- ***Disagreement on specifying 1,000 kings as opposed to "negligible kings"***

Management Plan Development

(d) In the commercial fishery,…

(A) if chum abundance is projected to be inadequate to achieve escapement goals and to provide for ANS, and if the commissioner determines that there is a harvestable surplus of coho sufficient to provide for escapement needs and a reasonable opportunity for subsistence, then the commissioner may open a directed coho fishery and the department shall manage fishery to harvest fewer than *4,000* chum salmon for the season.

- Intent is to allows for commercial coho fishing when chum are weak, but still cause negligible impact to overall chum escapement.
- 4,000 is approx. 1% of lowest year on record per Bue et al. 2008 estimates (FDS 08-64; 1988-2007); effectively limits start of commercial coho fishing to after 1 Aug (average 98% chum passage point in BTF)
- ***Disagreement on specifying 4,000 chum as opposed to "negligible chum"***

Management Plan Development

(c) In the subsistence fishery, **occurring within** the Kuskokwim River drainage**, including** waters of the mainstem of the river and other salmon spawning tributaries, unless otherwise specified by the department,

(1) the subsistence salmon net and fish wheel fisheries will be open **seven** days per week; however, the commissioner may alter fishing periods by emergency order**,** based on run **abundance,** [AND] **in order** to achieve escapement goals; however,

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Management Plan Development

(c) In the subsistence fishery, … however:

(A) **if the pre-season outlook for king salmon abundance is less than is required to achieve the *mid-point of the* drainage-wide escapement goal and the mid-point of ANS, then by emergency order the subsistence salmon fishery will be restricted beginning June 1 *to a minimum of one subsistence fishing period per week, with no more than 7 days between fishing periods*, until inseason tools allow for better resolution of actual run abundance; furthermore, to the degree practicable, weather should be considered in the timing of subsistence openings to better assure reasonable conditions to harvest and process fish.**

- Intent is to assure some minimum early season subsistence fishing opportunity when the king run is expected to be low, and that managers attempt to time openings to minimize likelihood of spoilage / waste
- Provision seeks to provide means to bolster escapements when king run is projected to be low, but recognizes limited accuracy of pre-season and early season abundance forecasts (prior to about 24 June).
- Consistent with the "conservative manner" under (b) and the uncertainty provision of 5 AAC39.222 (Policy for the Management of Sustainable Salmon Fisheries).
- ***Disagreement on allowing some minimum early-season oppertunity***

Management Plan Development

(c) In the subsistence fishery, … however:

(2) during subsistence **salmon fishing** closures **announced by emergency order,** [OF THREE CONSECUTIVE DAYS PER WEEK IN JUNE AND JULY,] all salmon nets with a mesh size larger than four inches must be removed from the water, and fish wheels may not be operated **unless:**

(A) a fish wheel used to take fish is equipped with a livebox that is constructed so that it contains no less than 45 cubic feet of water volume while it is in operation;

(B) the live box of a fish wheel must be checked at least once every six hours while the fish wheel is in operation, and all salmon of the species specified by emergency order must be returned alive to the water.

- Intent is to make more obvious provisions described in 5 AAC 01.270 (m)(2) for king salmon and 5 AAC 01.270 (n)(2) chum salmon.
- ***Disagreement on including fishwheel language because it already appears elsewhere in regulation as noted above.***

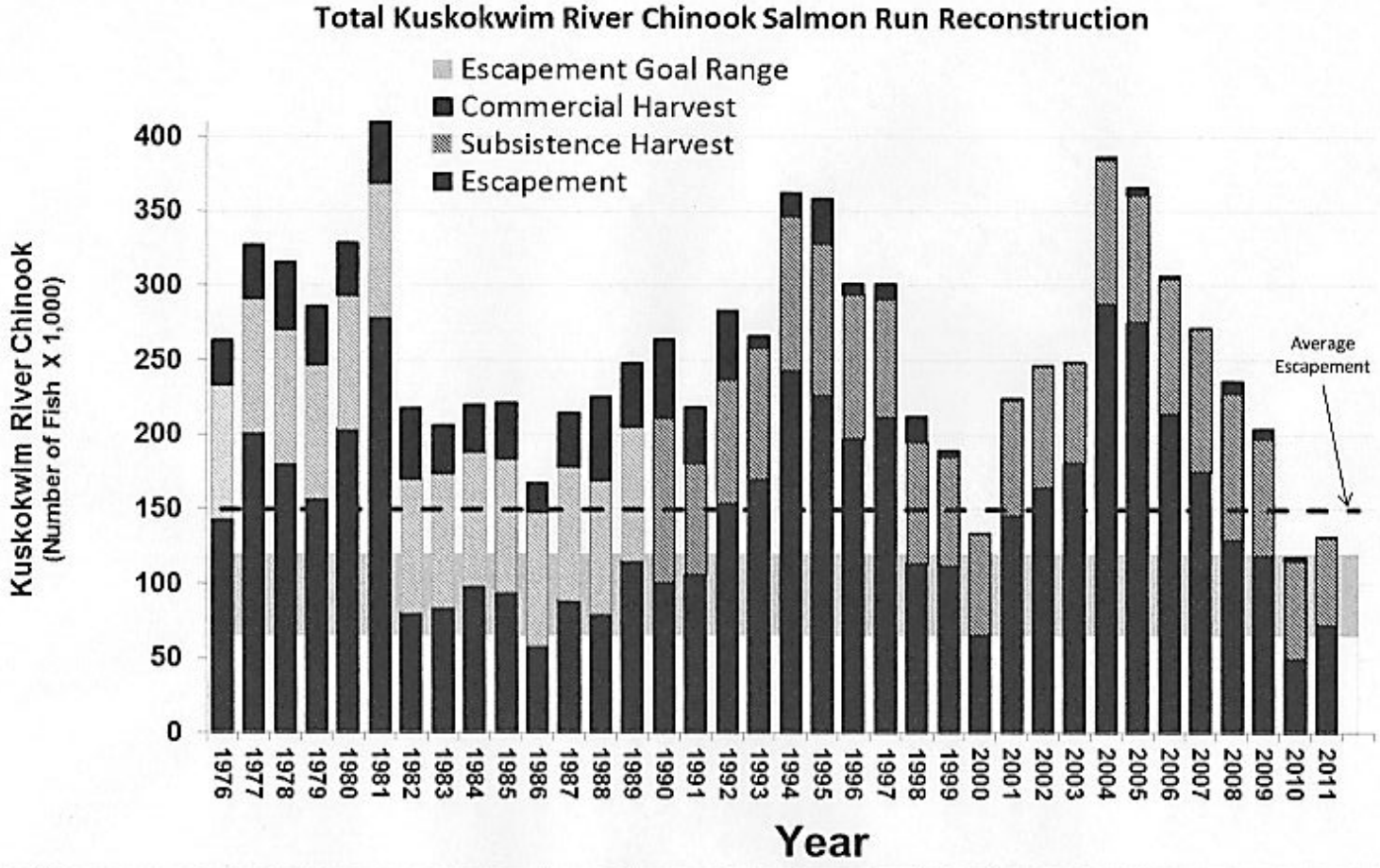
Management Plan Development

(c) In the subsistence fishery, … however:

(*x*) If the commissioner determines that king salmon abundance is projected to be inadequate to achieve the drainage-wide escapement goal and ANS, but that there is a harvestable surplus of salmon species other than king salmon sufficient to provide for escapement needs and a reasonable opportunity for subsistence, then the commissioner will to the extent practicable provide by emergency order *a minimum of one subsistence fishing period per week with no more than 7 days between open periods* and *with gillnet mesh size restricted to 6 inches or smaller* to allow for limited subsistence salmon harvest:

- Intent is to provide some minimum late-season subsistence fishing opportunity; if kings are the species of conservation concern, then allowing a means for subsistence opportunity on other salmon species through the use gillnets with 6 inch or smaller mesh size.
- ***Disagreement on allowing some minimum late-season subsistence opportunity intended to target species other than king salmon.***
- ***Disagreement on including language about allowing 6 inch or smaller mesh size in mgt. plan because it already appears elsewhere in regulation.***

Insert graphics illustrating importance to subsistence:



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OLD BUSINESS:

c. Discussion/approval: Bev Hoffman's letter to recruit an upriver elder (*letter distributed on September 29th and included in the November 3rd packet*).

Kuskokwim River Salmon Management Working Group

P.O. BOX 1467 • BETHEL, AK 99559 • 907-543-2433 • 907-543-2021 FAX

Dear

The Kuskokwim Salmon Management Working Group needs to fill the Upriver Elder seat left vacant when we lost the late Iyana Gusty. We would like your community to appoint an elder who will work with other stakeholders on issues and management of our Kuskokwim Salmon.

This individual will need to attend Working Group inseason meetings via teleconference and at least once a year in person. It would be good if the tribal organization can be responsible for receiving the agenda packets prior to each meeting and making sure the upper river elder has a place to use a telephone to call in. All calls are toll-free.

We are anxious to have someone in this seat. Please contact any of the chairs regarding this matter. I have listed all the Working Group members who volunteer their time to work on the issues and management of all Kuskokwim Salmon Species. Quyana for your help in filling this seat.

Sincerely,

Beverly A. Hoffman, Co-Chair