

PROPOSAL 147 - 5 AAC 57.160. Kenai River and Kasilof River Early-run King Salmon Management Plan. and 5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai River Drainage Area. Start the Kenai River early-run king salmon fishery as an unbaited, single-hook, artificial lure, no retention fishery, as follows:

The solution is that the Board require ADF&G managers to (1) embrace the all to under-utilized management tool of hook and release fishing, (2) implement a reasonable management philosophy that "minimizes mortality yet maximizes opportunity" and (3) put in place a clear "step up" plan that begins with single hook, no bait, hook and release fishing and monitors the run daily either liberalizing or restricting it based on how the run shapes up. Presently, the ER king fishery is completely closed for its duration, whereas NO chinook sport fishing is allowed during May and June. this is a terrible loss of opportunity to both resident and non-resident anglers, but one that is worth enduring IF (capital IF!) the hardship actually produces substantial savings. Sadly, this is not the case: by utilizing ADF&G's own data and multiplying total angler effort in May/June with angler success rate and then Hook and Release mortality averages (5-8%) the data shows that 25-50 total fish were saved by a complete closure over a two month period. Now, if the run is so dire that escapement numbers were clearly going to fall under the current goal, then the sport fishery must be closed. Sustainability of the resource must remain as priority above anglers needs or desires. However, if and when the ER is projected to be ONE single fish over the minimum, a step-up process from 'hook and release' to harvest to full bait should be implemented. Presently, with The Departments reluctance to utilize the proven effective tool of Hook and Release fishing, it seems that ADF&G's management philosophy is to create maximum hardship that produces minimal gains. While I am sure this is not intentional, the fact remains that NOT allowing Hook and Release fishing is providing for extremely minimal savings.

What is the issue you would like the board to address and why? I would like the board to address the repeated complete closures of the Early Run Kenai River king salmon sport fishery so

that anglers can once again enjoy this remarkable resource, this quiet time, and thereby take some pressure off of the Late Run KR king salmon fishery.

PROPOSED BY: Greg Brush

(EF-F16-066)

PROPOSAL 148 - 5 AAC 57.160. Kenai River and Kasilof River Early-run King Salmon Management Plan. Rewrite the *Kenai River and Kasilof River Early-run King Salmon Management Plan* to redefine early-run stocks and establish age- and sex-based escapement goals, as follows:

(REPEAL AND READOPT 5 AAC 57.160)

5 AAC 57.160. Kenai River Early-run Tributary Stock King Salmon and Kasilof River Early-run King Salmon Management Plan

(a) The purpose of this management plan is to ensure an adequate escapement of early-run king salmon into the Kenai and Kasilof Rivers, to conserve the unique large size early0run king salmon in the Kenai River, and to provide the department with management guidelines. **In the Kenai River the early-run tributary stock of King salmon are those king salmon going past the sonar counter at river mile 14 prior to June 22.**

(b) The department shall manage the Kenai River early-run **tributary stock of** king salmon sport and guided sport fisheries to achieve the optimal escapement goal of 5,300 – 9,000 fish **age 4 or older of which 50 percent must be female.**

(c) The department shall manage the Kasilof River early-run king salmon sport and guided sport fisheries to achieve the sustainable escapement goal, ensure adequate escapement of naturally-produced king salmon, and to minimize the effects of conservation actions for the Kenai River on the Kasilof River.

(d) In the Kenai River, the entire river is closed to king salmon fishing from January 1 until July 1 and from July 1 that portion above the sonar counter at river mile 14 is closed to king salmon fishing until such time that the age, sex and size composition of these tributary stocks returns to levels as were seen when his plan was first promulgated in 1988. The river will remain closed above the Sonar Counter until the Department comes back to the Board during a regularly scheduled BOF meeting with data on the age, size and sex of these tributary fish which warrants the reopening of some portion of this part of the river.

(e) Because of the run timing of these Kenai River king salmon hey are not harvested by the UCI commercial fishery; however the Department should take actions as appropriate in any other fishery where there is significant harvest of these tributary stocks of king salmon which may be causing this age, sex and size decline.

What is the issue you would like the board to address and why? In 1988 when the first management plan for Kenai River Early-run Kings was made the Department did not have the genetics technology they have now. July first was erroneously set as the demarcation of early and late-run king salmon (McKinley 2013). We now know that setting the escapement goals based on run timing was incorrect and that the goals should have been set based on biology (Reimer 2016) as Tributary (prior to June 22) and Mainstem (after June 22). Because of this error the Tributary

stocks have been getting shorted by the counting of 20 to 30 percent of the escapement actually being of mainstem origin. In addition McKinley found that over 50 percent of the harvest from July 1 to July 15 above the Soldotna Bridge is actually Tributary stocks which are erroneously subtracted from the mainstem escapement. This means that the escapement of tributary bound stocks is much reduced from what the Department has been reporting. Because of this and the prosecution of the fishery, tributary stocks bound for Beaver Creek, Soldotna Creek, Slikok Creek and Juneau Creek are gone or going to extinction from overharvest.

Additionally the Department found that the sonar counts from 1986 to 2011 (26 years) were not correct and recreated them using a Bayesian model of unknown performance. In 2012 ADF&G began counting with DIDSON sonar which was supposed to be the solution, but by 2013 a CIP was submitted to replace DIDSON with AIERS because of insurmountable problems with the DIDSON counts (Swanton 2013). This CIP included funding for 2 years of SSART (mark/Recap) which was supposed to assess this new counting technology, reports of this study were to be completed by the spring of 2014 and 2015. Reports from the in-river gillnetting, inriver creel and SSART projects mention the bias and errors associated with these programs as well as the statewide harvest survey which are used with the mixture model to determine a daily sonar count. When the escapement from the weirs operated by FWS and the age/sex composition are compared to the sonar count at either location, river mile 8.6 or 14 it is quite obvious that the sonar counts are well below the estimates produced by the weirs, mark/recapture or by the SSART method. The same is true when you compare the age/sex composition from the weirs to the numbers produced from the netting program. While we are still waiting for the reports from the 1.8 million dollar CIP from 2013 which are already 1-2 years late, we are left with an Early Run Tributary stock which is in trouble and should be listed as a stock of concern. The age of these Chinook is declining to where over half of the males are now under 4 years old, and the FWS estimates of females in Killey and Funny rivers has shifted from a majority of 1.4 age fish to now the majority are 1.3 age. Even more troubling is over 75 percent of the return is now male. Since the department seems incapable of taking action in this fishery it is left to the Board to establish that this stock is a Stock of Concern and close the fishery until this stock recovers in age, sex, size and numbers.

PROPOSED BY: Debra Blossom (HQ-F16-111)

PROPOSAL 149 - 5 AAC 57.160. Kenai River and Kasilof River Early-run King Salmon Management Plan. Revise *Kenai River and Kasilof River Early-run King Salmon Management Plan*, as follows:

Revise the management to achieve to following goals.

1. Manage for escapements comparable to the historical average and range.
2. Manage conservatively at low run sizes to optimize future returns.
3. Provide fishery opportunity based on abundance.

Establish a “step-up” regulatory strategy that replaces the slot limit with an effective but precautionary alternative:

- A. Limit harvest to fish under 30 inches at run sizes which produce escapements within the OEG in order to optimize fishery opportunity while also providing some harvest opportunity on small fish sizes that have been historically underexploited.
- B. Liberalize fishing opportunity at run sizes which produce escapements exceeding the OEG while also encouraging increased harvest of small fish sizes to balance potential angler preferences for larger fish.
- C. Repeal the “over 55 inches” provision and the sealing requirements that help implement this provision.

AAC 57.160 Kenai River and Kasilof River Early-run King Salmon Management Plan (a)

The purpose of this management plan is to ensure an adequate escapement of early-run king salmon into the Kenai and Kasilof Rivers, to conserve the unique large size early-run king salmon in the Kenai River, and to provide the department with management guidelines.

(b) The department shall manage the Kenai River early-run king salmon sport and guided sport fisheries to achieve the optimal escapement goal of 5,300 – 9,000 fish, to provide reasonable harvest opportunities over the entire run, and to ensure **escapement of a representative age and size composition of the run** [THE AGE AND SIZE COMPOSITION OF THE HARVEST CLOSELY APPROXIMATES THE AGE AND SIZE COMPOSITION OF THE RUN].

(c) The department shall manage the Kasilof River early-run king salmon sport and guided sport fisheries to achieve the sustainable escapement goal, to provide reasonable harvest opportunities over the entire run while ensuring adequate escapement of naturally-produced king salmon, and to minimize the effects of conservation actions for the Kenai River on the Kasilof River.

(d) In the Kenai River,

(1) **Repeal** the seasons, bag, possession, and size limits, and other special provisions for early-run king salmon set out in 5 AAC 57.120(a)(2)(i) and (iii), the provision in 5 AAC 57120 (b)(1) addressing the annual limit of king salmon less than 28 inches in length taken from the Kenai River from January 1 through June 30 and **Replace as follows**.

(2) if the spawning escapement is projected to be less than the lower end of the optimal escapement goal, the commissioner shall, by emergency order, restrict as necessary the taking of king salmon in the sport and guided sport fisheries in the Kenai River to achieve the optimal escapement goal using one of the following methods:

(A) prohibit the retention of king salmon **greater than** [LESS THAN 55 INCHES IN LENGTH, EXCEPT KING SALMON LESS THAN] 20 inches in length, downstream from an ADF&G regulatory marker located at the outlet of Skilak Lake through June 30, and require that upstream from an ADF&G regulatory marker located approximately 300 yards downstream from the mouth of Slikok Creek to an ADF&G regulatory marker located at the outlet of Skilak Lake, from July 1 through July 14, only one unbaited, barbless, single-hook, artificial lure, as described in 5 AAC 57.121(1) (J), may be used when sport fishing for king salmon and only king salmon less than 20 inches in length [~~AND 55 INCHES OR GREATER IN LENGTH~~] may be retained; or

(B) close the sport and guided sport fisheries to the taking of king salmon in the Kenai River

(i) downstream from an ADF&G regulatory marker located at the outlet of Skilak Lake through June 30; and

(ii) from July 1 through July 14, upstream from an ADF&G regulatory marker located approximately 300 yards downstream from the mouth of Slikok Creek to an ADF&G regulatory marker located at the outlet of Skilak Lake;

(3) if the spawning escapement is projected to fall within the optimal escapement goal, the commissioner may, by emergency order, liberalize the sport fishery downstream from an ADF&G regulatory marker located at the outlet of Skilak Lake, ~~[BY ALLOWING THE USE OF BAIT]~~ if the department projects that the total harvest under a liberalized sport fishery will not reduce the spawning escapement below the optimal escapement goal as follows;

(i) only king salmon less than 30 [42] inches in length [OR 55 INCHES OR GREATER IN LENGTH MAY] to be retained;

(ii) only one unbaited, barbless, single-hook, artificial lure, as described in 5 AAC 57.121(1) (J), may be used when sport fishing for king salmon and;

(iii) allow one king salmon less than 30 inches to be retained per day in addition to daily and annual bag limits and allow an individual who retains a king salmon less than 30 inches to continue to fish for king salmon.

(4) if the spawning escapement is projected to exceed the optimal escapement goal, the commissioner may, by emergency order, liberalize the sport fishery downstream from an ADF&G regulatory marker located at the outlet of Skilak Lake, by one or more of the following:

(i) allow the use of bait;

(ii) allow retention of king salmon of all sizes

(iii) allow one king salmon less than 30 inches to be retained per day in addition to daily and annual bag limits and allow an individual who retains a king salmon less than 30 inches to continue to fish for king salmon.

~~-(4) a person may not possess, transport, or export from this state, a king salmon 55 inches or greater in length taken from the Kenai River from January 1 through July 31, unless the fish has been sealed by an authorized representative of the department within three days after the taking; the person taking the fish must sign the sealing certificate at the time of sealing; the seal must remain on the fish until the preservation or taxidermy process has commenced; a person may not falsify any information required on the sealing certificate; in this paragraph,~~

~~(A) "sealing" means the placement of an official marker or locking tag (seal) by an authorized representative of the department on a fish and may include~~

~~(i) collecting and recording biological information concerning the conditions under which the fish was taken;~~

~~(ii) measuring the specimen submitted for sealing; and~~

~~(iii) retaining specific portions of the fish for biological information, including scales, fin rays, and vertebrae;~~

~~(B) "sealing certificate" means a form used by the department for recording information when sealing a fish. }~~

(e) In the Kasilof River, the seasons, bag, possession, and size limits, and other special provisions for king salmon are set out in 5 AAC 56.120(1) and 5 AAC 56.122(a) (8).

What is the issue you would like the board to address and why? Management plan provisions are contrary to plan goals and have produced undesirable unintended consequences.

- The size slot limit restricting harvest to fish less than 42 inches prevents managing harvest to closely approximate the size and age composition of the run by design.
- At large run sizes, the protected size slot results in escapements that exceed the optimum escapement goal.
- The size slot has failed to eliminate fishery selectivity. Harvest remains concentrated on the largest fish allowed under the slot. Smaller fish continue to be substantially under harvested relative to abundance.
- While the slot limit has eliminated the harvest of fish over 42 inches, it has failed to increase relative abundance of large fish which ADFG has determined results from ocean conditions.

PROPOSED BY: Kenai River Sportfishing Association (HQ-F16-073)

PROPOSAL 150 - 5 AAC 57.120. General provisions for seasons, bag, possession, annual and size limits, and methods and means for the Kenai River Drainage Area. Start the Kenai River king salmon sport fisheries as unbaited, single-hook, artificial lure, no retention, as follows:

I encourage a new approach to managing King Salmon on the Kenai River that includes a proactive, conservative approach beginning with single hook, no bait, catch and release only fishing on opening day. Fisheries managers would have the ability to step up and allow bait and/or harvest as the run develops and provided more information about the true strength of the run. Catch and release fishing results in very low mortality (according to ADF&G's study), and therefore would be a great way to continue allowing opportunity, while simultaneously minimizing harvest of these special and unique fish in need of additional protection during a time of low abundance.

What is the issue you would like the board to address and why? It's no secret that the Kenai River King Salmon have had several tough years in a row, and despite the period of low abundance, the decision has been regularly made to open the river to full harvest on July 1st. Given the unpredictable and borderline-crisis status of this run, the July 1st opener is an irresponsible management practice, at best. If the fishery shows signs of a weak run, the decision can be made to further restrict, but there's no way of knowing if it's too late, and there's no way to go backwards and put back those fish that have already been harvested. So why not add some proactive strategies to our current reactive management plan? It would be a logical, conservation minded, and responsible addition to the current reactive strategies utilized by ADF&G, and widely supported by the community that cares most about the sustainability of our special fishery.

PROPOSED BY: Mark Wackler (EF-F16-128)

PROPOSAL 151 - 5 AAC 21.359. Kenai River Late-Run King Salmon Management Plan., 5 AAC 57.121. Special provisions for the seasons, bag, possession, and size limits, and methods and means for the Lower Section of the Kenai River Drainage Area., and 5 AAC 57.160. Kenai River and Kasilof River Early-run King Salmon Management Plan. Repeal barbless hook provisions in Lower Kenai River, as follows:

I suggest the Board revisit this topic under "housekeeping" and repeal the restriction. The use of barbless hooks only penalizes a novice angler such as our youth who wishes to CATCH one Kenai River king during a Catch and Release Emergency Order. Restrictions that make it increasingly difficult to even catch a fish continue to be implemented. In the future, after correcting this dangerous precedent, I respectfully suggest that Board focus on restrictions that limit the HARVEST of said chinook, rather than hand-cuffing our future anglers with regulations that are not supported by hard data and studies. If ADF&G wishes to do a new study, and the data that the new study provides clearly shows that KR king salmon mortality is substantially reduced through the use of barbless hooks, then myself and other conservation minded anglers would support a regulation change.

What is the issue you would like the board to address and why? I would like the Board to address the highly alarming adoption of a new sport fishery regulation during the last BOF cycle that was based on emotion rather than data. Three years ago, a particular Board member stated that he desired a barbless hook restriction on Kenai River kings to be "his legacy that he left behind". Those are powerful words. The problem with the adoption of this policy is not "the legacy" per se but the precedent that this type of action sets, namely passing restrictive regulation without data or a specific study to support the change. In this particular instance, there is no data that shows that the survival rate of Hook and Release Kenai River king salmon is increased by utilizing barbless hooks. Rather, the ADF&G September 1991 Hook and Release Mortality study by Terry Bendock shows numerous variables impacting a KR kings survival rate, the foremost being the location of the hook, not the presence of a barb.

PROPOSED BY: Greg Brush (EF-F16-064)

PROPOSAL 152 – 5 AAC 57.121. Special provisions for the seasons, bag, possession, and size limits, and methods and means for the Lower Section of the Kenai River Drainage Area. Expand the dates to prohibit back trolling and tie to prohibition of bait, as follows:

Special Regulations

That portion of the Kenai River between ADF&G regulatory markers located at River mile 11 and River mile 12

A) May 16 - July 31

Back-trolling prohibited when bait is allowed to be used during the King salmon season. A person may not sport fish for any species from a vessel that is making upstream progress relative to the water with the aid of a motor

What is the issue you would like the board to address and why? That portion of the Kenai River between ADF&G regulatory markers located at River mile 11 and River mile 12.

A) July 1 - July 31

Back trolling prohibited. A person may not sport fish for any species of fish from a vessel that is making upstream progress relative to the water with the aid of a motor.

When this regulation was adopted it was tied with when the lower Kenai River went to bait. As the popular method to fish this area was to drift thru River mile 12 down to 11 dragging a spin n glo and eggs. There was conflict between the two different methods of fishing which led to this regulation being adopted. However, when the sport fishery is not allowed to use bait during this timeframe very few anglers choose to drift. Changing the dates for the entire King season and tying the no back-trolling to when the River goes to bait would benefit all anglers instead of the few that like to drift without bait. Remember that those that would prefer to drift can still do so in this area even without the use of bait. I would like to see the dates of July 1 - July 31 be changed to say from May 16 (this is when the Didson begins counting King salmon) - July 31 no back trolling between River mile 11 and River mile 12 only when bait is allowed.

PROPOSED BY: Kenai River Professional Guide Association (KRPGA) (EF-F16-139)

PROPOSAL 153 - 5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai River Drainage Area. Prohibit fishing for king salmon from markers 300 yards below Slikok Creek upstream to Skilak Lake, as follows:

Add to “Lower Kenai River Mainstem and Skilak Lake” seasons and bag limits for King Salmon; **300 yards below Slikok Creek upstream to Skilak Lake: Closed to king salmon fishing** [300 YARDS BELOW SLIKOK CREEK UPSTREAM TO SKILAK LAKE: JANUARY 1 – JULY 14: 1 PER DAY, 1 IN POSSESSION, MUST BE LESS THAN 42 INCHES IN LENGTH OR LONGER THAN 55 INCHES. JULY 15 – JULY 31: 1 PER DAY 1 IN POSSESSION.]

What is the issue you would like the board to address and why? On the Kenai Peninsula for many decades fishing for Chinook salmon has only been allowed in the lower reaches of most streams open to fishing for Chinook salmon. The Kenai River is the one exception to that protective management practice. In the Kenai River fishing for Chinook salmon is open for fifty river miles. This area includes major spawning areas for both early run and late run fish. While there are closed areas around stream mouths to protect some components of early run fish those protected areas do not protect mainstem spawners. We propose limiting fishing for Chinook salmon to downstream from 300 yards below Slikok Creek.

In recent years we have seen a troubling pattern of near record low returns of both early and late run Kenai River Chinook salmon to the Kenai River. We believe the recent declines in statewide Chinook fisheries are largely due to marine survival issues, however, we also feel that part of our Kenai River decline can be linked to in-river harvest patterns; fishing on middle river mainstem spawning fish throughout the entire King salmon season, insufficient spawning area protections and multiple years of over-harvest of the population due to biased high sonar counts. We are also concerned that the procedure in place that counts all Chinook harvest after July 1st against the Late Run has resulted in less Early Run escapement than reported.

History seems pretty clear that factors such as population growth, increased use, commercialization and development make it almost impossible for us to sustain indigenous wild Chinook salmon populations. Unless we alter our behavior we will join the long list of streams dependent on hatchery-produced fish. We will not be able to sustain the high-density sport fishery that has developed on the Kenai River unless we consider a more conservative approach of protecting production to secure future run strength sustainability.

We believe this type of conservation measure is both prudent and necessary as we face a future of population growth and increased demands on our Kenai River King salmon resources. This regulation change would be consistent with the closures prescribed by the Department over the last several years to insure adequate Early Run escapement. It would also provide spawning area protection for mainstem Late Run fish as well. This measure would provide all spawning and staging King salmon an area where they can spawn in certain age class diversity free of selective harvest practices, catch and release mortality and spawning disruption.

The 2013 AYK Chinook Salmon Research Plan suggests that years of selective harvest of the largest fish can result in increasingly male based sex ratios, decreased size of spawners and a general decline in the return of the largest age classes. It will also result in lower than expected returns because of fecundity and egg quality of smaller females in the return. It goes on to say, that without efforts to counteract size selectivity and exploitation rates, improvements would be slow to materialize, requiring multiple generations. If we continue with the current management plan of allowing harvest all the way to Skilak Lake all season long we will severely hamper our opportunity to rectify our Kenai King salmon issues.

We believe this type of pro-active conservation measure would provide spawning certainty for insured long term sustainability of these valuable stocks while still providing for a vibrant sport fishery and harvest opportunity in the lower 18 miles of the Kenai River.

PROPOSED BY: Kenai Area Fisherman’s Coalition (HQ-F16-008)

PROPOSAL 154 - 5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai River Drainage Area. Expand the waters of the Kenai River closed to fishing for king salmon, as follows:

Move the finish line for chinook salmon sport fishing from the outlet of Skilak Lake (river mile 50) down to the lower boundary of the Kenai National Wildlife Refuge (river mile 45.5).

5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai River Drainage Area (a) Unless otherwise specified in 5 AAC 57.121 - 5 AAC 57.123 or by an emergency order issued under AS 16.05.060, the following are the general seasons, bag, possession, annual, and size limits, and methods and means that apply to sport fishing for finfish in the Kenai River Drainage Area:

- (1) salmon may be landed only with the aid of a landing net or by hand;
- (2) king salmon 20 inches or greater in length, as follows:

A) may be taken only from January 1 - July 31, in the Kenai River from its mouth upstream to an ADF&G regulatory marker located at **the lower boundary of the Kenai National Wildlife Refuge at river mile 45.5** [THE OUTLET OF SKILAK LAKE], with a bag and possession limit of one fish, as follows:

What is the issue you would like the board to address and why? The Middle Kenai River from the outlet of Skilak Lake downstream to the Kenai National Wildlife Refuge boundary is a known spawning area for both early and late-run chinook salmon on the Kenai River. The early-run chinook using this area to spawn are a small, biologically unique, and sensitive species group. The chinook salmon species in the Kenai River are facing a critical juncture in vitality and viability. Since Kenai River king salmon are experiencing a period of low productivity and, since 2009, below average run strength, a conservation effort to protect these fish on their spawning grounds is warranted.

PROPOSED BY: Heather Pearson (EF-F16-091)

PROPOSAL 155 - 5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai River Drainage Area. Expand the waters of the Kenai River closed to fishing for king salmon, as follows:

5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai River Drainage Area

(a) Unless otherwise specified in 5 AAC 57.121 - 5 AAC 57.123 or by an emergency order issued under AS 16.05.060 , the following are the general seasons, bag, possession, annual, and size limits, and methods and means that apply to sport fishing for finfish in the Kenai River Drainage Area:

- (1) salmon may be landed only with the aid of a landing net or by hand;
- (2) king salmon 20 inches or greater in length, as follows:

(A) may be taken only from January 1 - July 31, in the Kenai River from its mouth upstream to an ADF&G regulatory marker located **approximately one mile upstream from the mouth of the Lower Killey River** [AT THE OUTLET OF SKILAK LAKE], with a bag and possession limit of one fish, as follows:

(i) from January 1 - June 30, from its mouth upstream to an ADF&G regulatory marker located at the outlet of Skilak Lake, and from July 1 - July 14, from an ADF&G regulatory marker located approximately 300 yards downstream from the mouth of the Slikok Creek upstream to an ADF&G regulatory marker located **approximately one mile upstream from the mouth of the Lower Killey River** [AT THE OUTLET OF SKILAK LAKE], only king salmon that are less than 42 inches in length or 55 inches or greater in length may be retained;

(B) king salmon 20 inches or greater in length may not be taken

(i) in the Kenai River upstream from an ADF&G regulatory marker located **approximately one mile upstream from the mouth of the Lower Killey River** [AT THE OUTLET OF SKILAK LAKE], including Kenai Lake; and

What is the issue you would like the board to address and why? Chinook Salmon that arrive in the main-stem Kenai River between the Killey River sanctuary and Skilak Lake prior to July 31 are vulnerable to harvest in a given year whereas fish that arrive after July 31 are protected from harvest. If nothing is changed, different harvest opportunities and likely different harvest rates could affect the composition and run-timing for this aggregate of early-arriving main-stem spawners. Apparent shifts in spawn timing have already been reported by the Alaska Department of Fish and Game (Department; Reimer 2013). Non-random harvest on small, discrete spawning stocks imposes risks to population sustainability, and harvest selection can eventually lead to elimination of specific spawning groups (Olver et al. 1995).

Why: Chinook Salmon abundance in the Kenai River and throughout Alaska has been decreasing since around 2007. Some stocks are also exhibiting declining trends in size and age, including Kenai River Chinook Salmon that spawn on the Kenai National Wildlife Refuge (Kenai NWR), either in tributary streams (Funny River escapement analyzed by Boersma and Gates 2016) or the main-stem Kenai River (late-run commercial harvest analyzed by Lewis et al. 2015). Several mechanisms have been identified as potential drivers of these trends (e.g., size-selective harvest, competitive interactions, and changing environmental conditions), but the evidence is not conclusive for a specific cause (Lewis et al. 2015).

The main-stem Kenai River below Skilak Lake serves as an important spawning area for Chinook Salmon. In fact, river miles 46 and 47 on the Kenai NWR represent some of the highest densities of spawners in the entire watershed (Reimer 2013). Most of the main-stem spawners in this area are part of the late run that enter the Kenai River in July and August, but a small number are part of the early run that enter the Kenai River during May and June.

Although anecdotal information from local residents indicates this early-arriving group of main-stem spawners was likely at higher levels of abundance in previous years, recent work by the Department indicates only a small number of early-run fish currently spawn in this area (Reimer 2013). Between 2010 and 2013, the Department successfully radio-tagged and tracked early-run Chinook Salmon to spawning areas, but only a small proportion (about 2.5%) spawned in the main-stem Kenai River between the Kenai NWR boundary and Skilak Lake. Regardless of the uncertainties inherent in these data, one thing is clear -- only a small number of early-run main-stem spawners are found in the area. Any Chinook Salmon sport fishery in this stretch of river during July is in large part a terminal fishery for this group of main-stem spawners, and results in harvest pressure on other fish migrating through to other parts of the watershed where they are currently protected from harvest.

The Department (McKinley et al. 2002) reported that disproportionate harvest for early-run Chinook Salmon occurred in the past, mainly early in the season during years of restrictions to the fishery. Harvest rates were disproportionately higher in May and early June compared to later in June in years when the fishery was restricted to catch-and-release or trophy fishing (Figure 24 in McKinley et al. 2002). McKinley et al. (2002) recognized that disproportionate harvest of early-run Chinook Salmon in May or June could have biological impacts such as shifts in run-timing and thus recommended managing the inriver Chinook Salmon sport fishery to avoid disproportionately harvesting either early or late arriving fish.

A similar threat currently exists for Chinook Salmon that spawn in the main-stem Kenai River between the Killey River sanctuary and the outlet of Skilak Lake. Table 16 of Reimer (2013) presents information that indicates mainstem-spawning Chinook Salmon established site fidelity in the Moose River to Skilak Lake section as early as July 7 to July 9 in 2012 and 2013 and indicates some fish likely completed spawning and died prior to July 17. These fish represent the early-arriving portion of the run and would all be vulnerable to harvest in this stretch of river in most years, whereas the vast majority of main-stem spawners in this stretch of river arrive after July 31 and are protected from harvest. Different harvest opportunities and likely different harvest rates for the early-arriving group of fish could lead to changes in composition and shifts in run timing.

Although McKinley et al. (2002) found no observable trends or other evidence for shifts in run timing for early-run Chinook Salmon, data presented by Reimer (2013) indicates spawn timing for early-run main-stem spawners has shifted and appears to be about a month later than observations in 1990. As presented in Figure 9 of Reimer (2013), the median post-spawning mortality date for early-run main-stem spawners in 1990 was about July 19 whereas the median post-spawning mortality date for early-run main-stem spawners from 2010-2013 was about August 21. Spawn timing for all main-stem spawners now appears to be similar regardless of when they enter the Kenai River and forms an overlapping continuum as noted by Reimer (2013).

The effect of this proposal will be to close approximately 4.5 miles of the main-stem Kenai River downstream of Skilak Lake to sport fishing for Chinook Salmon. This represents about 8% of the entire Kenai River downstream of Skilak Lake. This proposal will reduce the harvest of both early- and late-run Chinook Salmon by an unknown amount. There will be little change in regulatory complexity since our proposal simply extends the existing Chinook Salmon sport fishing closure for the Kenai River above Skilak Lake to an additional 4.5 miles of main-stem river below Skilak Lake.

Very few guided anglers target Chinook Salmon in this stretch of the river and very few fish are harvested. Therefore, very few anglers will likely be impacted by a closure to Chinook Salmon fishing in this stretch of river. Also, since this stretch of river has in essence been closed through in-season emergency orders since 2011, there should be no noticeable increases in use or crowding in any lower river fisheries. Since past fishery performance in regard to effort and harvest may have little or no relationship to future fishery performance (effort and harvest), managing this stretch of river to avoid differential harvest of even a small number of fish is appropriate, especially given the current small number of fish estimated to use this area during July.

Current resolution of genetic information does not allow for finer-scale management of Chinook Salmon that spawn in the main-stem Kenai River. However, given what we know about current abundance and observed declining trends in size and age, a cautionary approach to management is appropriate and prudent.

One of the principles of the Alaska Sustainable Salmon Policy is that “salmon escapement should be managed in a manner to maintain genetic and phenotypic characteristics of the stock by assuring appropriate geographic and temporal distribution of spawners as well as consideration of range, sex ratio, and other population attributes.” This principle is consistent with tenets of the U. S. Fish

and Wildlife Service’s policy on Biological Integrity, Diversity, and Environmental Health (601 FW 3) which directs the Service to maintain biological integrity on national wildlife refuges, defined as “Biotic composition, structure, and functioning at genetic, organism, and community levels comparable with historic conditions...” Managing the main-stem Kenai River below Skilak Lake to avoid differential harvest of Chinook Salmon will address the needs of both policies and both agencies, and promotes conservation of the overall Kenai River Chinook Salmon stock complex. Maintaining life history diversity and biocomplexity is important not only for the long-term sustainability of the overall stock, but also for the overall sustainability of the fisheries that exploit the stock (Hilborn et al. 2003).

There are other spawning areas for Chinook Salmon in the main-stem Kenai River upstream of the Slikok Creek closure area that may also benefit from regulations that restrict harvest. For example, a large proportion of early-run main-stem spawning fish located above Slikok Creek after July 15 in 2010-2013 (range 29 to 71%) were in “unrestricted” areas of the river that are normally open to sport fishing (Appendix B5; Reimer 2013). Sport fishing regulations for Kenai River Chinook Salmon above Slikok Creek also become more liberal from July 15-July 31, allowing the use of bait and removal of a protective slot limit. At this time, we believe protections for these fish can be better addressed through a different mechanism than a time and area closure. We have submitted a separate proposal to extend early-run regulations upstream of the Slikok Creek sanctuary area for the entire month of July to promote resource conservation while providing for fishery participation and opportunity.

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PROPOSED BY: U. S. Fish and Wildlife Service, Alaska Region (HQ-F16-014)

PROPOSAL 156 – 5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai River Drainage Area. Replace slot limit for Kenai River king salmon with maximum size limit to prohibit retention of king salmon greater than 42 inches in length, as follows:

Change to “Lower Kenai River Mainstem and Skilak Lake” seasons and bag limits for King salmon; **Kenai River area open to King salmon fishing January 1 – July 31: 1 per day, 1 in possession, must be less than 42 inches in length.**

[KENAI RIVER MOUTH UPSTREAM TO 300 YARDS BELO SLIKOK CREEK:
JANUARY 1 – JUNE 30: 1 PER DAY, 1 IN POSSESSION, MUST BE LESS THAN 42 INCHES IN LENGTH OR LONGER THAN 55 INCHES.
JULY 1 – JULY 31: 1 PER DAY, 1 IN POSSESSION.

300 YARDS BELOW SLIKOK CREEK UPSTREAM TO SKILAK LAKE:
JANUARY 1 – JULY 14: 1 PER DAY, 1 IN POSSESSION, MUST BE LESS THAN 42 INCHES IN LENGTH OR LONGER THAN 55 INCHES.
JULY 15 – JULY 31: 1 PER DAY, 1 IN POSSESSION.]

What is the issue you would like the board to address and why? The Kenai River has long been known throughout the world for its large trophy size Chinook salmon. In recent years we have witnessed a dramatic decrease in the size of these fish. In the Kenai river it is required that all trophy Chinook over 55in in length be sealed within 3 days of harvest. Records have been kept since 2003, and prior to 2008 there was an average of 6 of these trophy fish sealed each year, however since 2007 there has only been 1 fish over 55in in length registered and that was in 2009.

This size decrease has been noted in many Chinook stocks throughout Alaskan waters and there are varying theories on why this is happening, however, fisheries scientists agree that this phenomena can be exacerbated in intense sport fisheries where selective harvest of the largest fish occurs. Neala Warren Kendall, of the University of Washington, wrote in a 2011 paper on Alaskan Pacific salmon fisheries, “I quantified and compared commercial and recreational fishery selection on Chinook salmon. I discovered that the selection by the recreational fishery, which consistently caught larger fish, but not the commercial fishery which overall caught smaller fish, has been consistent with the size trends towards smaller fish over time.” She goes on to say, “Selective harvest on wild fish populations has been associated with shifts towards smaller fish, younger age distributions, and decreased age and size maturation and is linked to changes including decreased fecundity, increased sexual dimorphism, lowered reproductive rates, loss of yield, increased variability in abundance and even fishery collapses. **Numerous studies have emphasized the importance of older, larger fish for stock stability and sustainability.**”

The 2013 AYK Chinook Salmon Research Action Plan, agrees with these assumptions about Fishing Induced Evolution (FIE), or as we know it selective harvest. It states, “declines in Chinook salmon abundance, increasingly male-biased sex ratios, decreased size of spawners, declines in size at age and declines in the return of the largest age classes are consistent with expected patterns that would result from selected harvest of the largest individuals.”

The Kenai river has one of the most intense sport fisheries on Chinook salmon in the world and the trophy size fish it produces are renowned, however, the fishery relies on selective harvest practices to produce these results. Recent returns clearly illustrate that this practice is not sustainable and unless we change our management approach of continuing to target our largest fish we will fail this valuable resource and continue to face challenges in both abundance and declines in the returns of our largest age classes. Many anglers seeking trophy size kings no longer recognize the Kenai as a trophy Chinook river.

We believe that if we change our management philosophy and protect our largest fish from harvest we can give ourselves the best chance to reverse this trend and propagate a better fishery than we have today. By incorporating a harvest restriction on keeping any fish over 42 in. in length we will protect almost all of our 1.5 age class and over 50% of our 1.4 age class for production purposes while still providing for a vibrant sport fishery. If mortality on these larger fish is limited to “catch and release” levels, then this portion of the return will be provided additional protection for spawning. Additionally, by being returned to the river they will provide additional angling opportunity for other anglers to catch a “trophy size” Kenai king. We understand more clearly now that we don’t have to kill these larger fish to enjoy catching one, having a mount made or provide for photo opportunities. This type of conservation measure is widely accepted, throughout the world, as a favorable approach towards sustainability of our fishery resources for future generations to enjoy. Future demand on our fishery resources is certain to increase over time so it is incumbent on us to protect and provide sustainability for these resources in the best way we can as regulators looking out for their well-being. This management change would provide that protection along with balanced fishing and harvest opportunities.

PROPOSED BY: Kenai Area Fisherman’s Coalition (HQ-F16-005)

PROPOSAL 157 – 5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai River Drainage Area. Modify the annual limit of king salmon from the Kenai River to two fish, only one taken prior to July 1, as follows:

Change to “Lower Kenai River Mainstem and Skilak Lake” seasons and bag limits for King salmon; **Of these 5 total king salmon no more than 2 may be taken from the Kenai River and only 1 may be taken from the Kenai River prior to July 1.**

[OF THESE 5 TOTAL KING SALMON NO MORE THAN 2 MAY BE TAKEN FROM THE KENAI RIVER]

What is the issue you would like the board to address and why? In recent years we have seen a troubling pattern of near record low returns of early run (ER) Kenai River Chinook salmon to the Kenai River. We believe that a good portion of our Kenai River ER decline can be linked to in-river harvest patterns, fishing on middle river mainstem spawning fish throughout the entire King salmon season, insufficient spawning area protections and multiple years of over-harvest of the population due to biased high sonar counts. We are also concerned that the procedure in place that counts all Chinook harvest after July 1st against the Late Run has resulted in less Early Run escapement than reported.

The ER mainstem component of Kings have always been available for harvest longer than any other subspecies of Kenai River Kings because of their early run timing and lack of spawning area protections.

Please remember that these fish have only been fished on like this for about 35 -40 years, which is a relatively short time in the scheme of things, but long enough to have altered their ASL characteristics. The 2012 Yukon study identifies this as, **FIE (Fishing Induced Evolution) whereby you see changes in the genetic component resulting in declines in Chinook abundance, increasingly male-biased sex ratios, decreased size of spawners and declines in the return of the oldest age classes. They go on to say that these can be the results of selective fishing. They also say that, “If size –and age-at-maturity are highly heritable, then the effects of selection would result in a propensity of stocks to propagate more small young mature fish in subsequent generations. This mechanism could cause a long-term decline in returns per spawner.”**

They conclude by saying, **“efforts to counteract declines would likely require reductions in size selectivity of gear and exploitation rates, and that improvements would be slow to materialize, requiring multiple generations under the new selection regime.”**

Even though the ER does not have any Cook Inlet commercial fishing occurring during its run timing into the Kenai River it has suffered more drastically in its age / sex composition over time than the Late Run. We believe this was largely a factor of in-river over-harvest. Over time, the data illustrates that we now have only about a 20 – 25% female component and our largest age class of 1.4 fish has fallen to less than 10% of the run where the 1986 – 2013 mean 1.4 average was 42% of the run.

Research tells us that if we implement a more conservative management scheme we can reverse these trends and rebound these stocks but it will take multiple generations to do so (20 – 30 years). This proposal seeks to lower the exploitation rates on ER fish by implementing a one fish bag limit prior to July 1st. This is just one of a suite of proposals our organization is putting forth to provide conservation measures to help in the recovery of our Kenai River Chinook salmon stocks and help us achieve long term sustainability for these stocks.

PROPOSED BY: Kenai Area Fisherman’s Coalition (HQ-F16-006)

PROPOSAL 158- 5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai River Drainage Area. Modify the annual limit of two king salmon for the Kenai River to include only one large fish, as follows:

I recommend the reasonable and logical solution of implimenting an "over/under" annual bag limit for both early and late run kenai kings. Keep the bag limit at two per person annually, but only allow the possible harvest of ONE large chinook. Many anglers wish to harvest KR chinook for food fish and an over/under limit would allow for that. For example; anglers who harvest a 50 pounder and then days later harvest a 18 pounder have still provided for their table, but just as

importantly, they have achieved several worthy goals. First, as mentioned above, they have possibly allowed a larger fish to reach the spawning beds but they have also spread the harvest across a broader range of age classes (thus strengthening the dynamics of the run) and potentially removing and NOT encouraging smaller fish to perpetuate the run. Precedent for this type of "over/under" management approach is already present in numerous fisheries. It is used in the relatively healthy Nushagak River king salmon sport fishery but not the struggling Kenai River king salmon sport fishery, which I find highly ironic. What length of fish would be allowed/protected is could be discussed and decided by The Board after the fact, once the proposal is adopted.

What is the issue you would like the board to address and why? An annual bag limit on Kenai kings that has not been changed for decades, despite suffering through what ADF&G calls a "period of low abundance" recently as well as trends whereas the legendary big fish of the Kenai River, specifically five ocean seven year old chinook, continue to decline. While managers may contend that they are not totally sure of the reasons for the decline of the big fish, one common sense fact remains: right now, every big fish that reaches the spawning beds improves our odds of this "big fish" resource rebounding.

PROPOSED BY: Greg Brush (EF-F16-062)

PROPOSAL 159 - 5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai river Drainage Area. and 5 AAC 57.121. Special provisions for seasons, bag, possession, and size limits, and methods and means for the Lower Section of the Kenai River Drainage Area. Extend the time that the slot limit for Kenai River king salmon is in effect, as follows:

5 AAC 57.120. General provisions for seasons, bag, possession, annual, and size limits, and methods and means for the Kenai River Drainage Area

(a) Unless otherwise specified in 5 AAC 57.121 - 5 AAC 57.123 or by an emergency order issued under AS 16.05.060 , the following are the general seasons, bag, possession, annual, and size limits, and methods and means that apply to sport fishing for finfish in the Kenai River Drainage Area:

- (1) salmon may be landed only with the aid of a landing net or by hand;
- (2) king salmon 20 inches or greater in length, as follows:
 - (A) may be taken only from January 1 - July 31, in the Kenai River from its mouth upstream to an ADF&G regulatory marker located at the outlet of Skilak Lake, with a bag and possession limit of one fish, as follows:
 - (i) from January 1 - June 30, from its mouth upstream to an ADF&G regulatory marker located at the outlet of Skilak Lake, and from July 1 - July 31 [14], from an ADF&G regulatory marker located approximately 300 yards downstream from the mouth of the Slikok Creek upstream to an ADF&G regulatory marker located at the outlet of Skilak Lake, only king salmon that are less than 42 inches in length or 55 inches or greater in length may be retained;

5 AAC 57.121. Special provisions for the seasons, bag, possession, and size limits, and methods and means for the Lower Section of the Kenai River Drainage Area

Unless otherwise specified by an emergency order issued under AS 16.05.060 , the following are the special provisions and localized exceptions to the general seasons, bag, possession, and size limits, and methods and means set out in 5 AAC 57.120 and 5 AAC 75 for the Lower Section of the Kenai River Drainage Area:

(1) sport fishing gear restrictions:

(A) from January 1 - June 30, in the Kenai River, and from July 1 - July 31 [14], in the Kenai River from an ADF&G regulatory marker located approximately 300 yards downstream from the mouth of Slikok Creek upstream to an ADF&G regulatory marker located at the outlet of Skilak

What is the issue you would like the board to address and why? Early-run Chinook Salmon that transit through lower Kenai River sport fisheries prior to July 1 are subject to management under conservative regulations which include a protective slot limit and no-bait restrictions. These conservative regulations continue through July 14 upstream of Slikok Creek but revert to general late-run regulations from July 15–July 31 which eliminates the slot limit and allows the use of bait. However, many early-run Chinook Salmon are still in unrestricted areas of the main-stem Kenai River after July 15. Changes to the regulations are necessary to prevent adverse effects to the composition and run-timing of this group of early-run Chinook Salmon.

Chinook Salmon abundance in the Kenai River and throughout Alaska has been decreasing since around 2007. Some stocks are also exhibiting declining trends in size and age, including Kenai River Chinook Salmon that spawn on the Kenai National Wildlife Refuge, either in tributary streams (Funny River escapement analyzed by Boersma and Gates 2016) or the main-stem Kenai River (late-run commercial harvest analyzed in Lewis et al. 2015). Several mechanisms have been identified as potential drivers of these trends (e.g., size-selective harvest, competitive interactions, and changing environmental conditions), but the evidence is not conclusive for a specific cause (Lewis et al. 2015).

Conservative regulations have been adopted by the Alaska Board of Fisheries (BOF) to protect early-run Chinook Salmon in the Kenai River, including a protective slot limit and the use of single, unbaited hooks. Recent research by the Alaska Department of Fish and Game (Department; Reimer 2013) indicates a considerable number of early-run Chinook Salmon may not receive the full protections intended by these regulations. For example, a large proportion of early-run main-stem spawning fish located above Slikok Creek after July 15 in 2010-2013 (range 29% to 71%) were in “unrestricted” areas of the river that are normally open to sport fishing (Appendix B5 in Reimer 2013). Sport fishing regulations for Kenai River Chinook Salmon from July 15-July 31 allow the use of bait and do not have a protective slot limit. Different harvest opportunities and likely different harvest rates for these fish could lead to changes in composition and shifts in run timing for early-run Chinook Salmon. This proposal seeks to conserve the unique large size early-run king salmon in the Kenai River as identified in the State of Alaska’s Kenai River and Kasilof River Early-run King Salmon Conservation Management Plan (5 AAC 56.070) by extending the protective slot limit and no-bait restrictions for most early-run Chinook Salmon throughout their residency in the main-stem Kenai River.

The Department reported that disproportionate harvest for early-run king salmon occurred in the past, mainly early in the season during years of restrictions to the fishery (McKinley et al. 2002). Harvest rates were disproportionately higher in May and early June compared to later in June in years when the fishery was restricted to catch-and-release or trophy fishing (McKinley et al. 2002; Figure 24). McKinley et al. (2002) recognized that disproportionate harvest of early-run Chinook Salmon in May or June could have biological impacts such as shifts in run-timing and thus recommended managing the in-river Chinook Salmon sport fishery to avoid disproportionately harvesting either early or late arriving fish.

The effect of this proposal will be to extend early-run regulations through July 31 upstream of the Slikok Creek closure area, including a protective slot limit and single hook/no bait restrictions. This would reduce the harvest of both early- and late-run Chinook Salmon by an unknown amount and likely reduce the harvest fish between 42 and 55 inches by an unknown amount.

One of the principles of the Alaska Sustainable Salmon Policy is that “*salmon escapement should be managed in a manner to maintain genetic and phenotypic characteristics of the stock by assuring appropriate geographic and temporal distribution of spawners as well as consideration of range, sex ratio, and other population attributes.*” This principle is consistent with tenets of the U. S. Fish and Wildlife Service’s policy on Biological Integrity, Diversity, and Environmental Health (601 FW 3) which directs the Service to maintain biological integrity on national wildlife refuges, defined as “*Biotic composition, structure, and functioning at genetic, organism, and community levels comparable with historic conditions...*” Managing the main-stem Kenai River below Skilak Lake to avoid differential harvest of Chinook Salmon will address the needs of both policies and both agencies, and promotes conservation of the overall Kenai River Chinook Salmon stock complex. Maintaining life history diversity and biocomplexity is important not only for the long-term sustainability of the overall stock, but also for the overall sustainability of the fisheries that exploit the stock (Hilborn et al. 2003).

This proposal promotes resource conservation by extending protections for early-run Chinook Salmon during their freshwater residency in the main-stem Kenai River above Slikok Creek while providing for fishery participation and opportunity. A separate time-and-area closure proposal has been submitted to provide protections for Chinook Salmon on their spawning grounds below Skilak Lake.

References:

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PROPOSED BY: U. S. Fish and Wildlife Service, Alaska Region (HQ-F16-015)
