



## Yukon Delta Fisheries Development Association

RC 017

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Chairman Karl Johnstone  
Alaska Board of Fisheries  
Alaska Department of Fish and Game  
Boards Support Section  
P.O. Box 115526  
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99811-5526

Dear Chairman Johnstone:

The purpose of this letter is to request the Alaska Board of Fisheries (BOF) to consider an emergency petition to change the regulations for allowable commercial fishing gear in the Lower Yukon Area, Districts 1, 2, and 3 (5 AAC 05.362. Yukon River Summer Chum Salmon Management Plan), during times of king salmon conservation. Specifically, we are primarily asking the BOF to consider changing the regulation to include purse seines as legal commercial gear to harvest summer chum salmon in the Lower Yukon Area (5 AAC 05.362 (k)), during times of king salmon conservation. Additionally, and secondarily, if purse seines are allowed as legal commercial gear for the directed summer chum salmon fishery, we request the BOF consider allowing the option of using monofilament purse seine web.

We are making this request because we believe that an emergency warrants action by the BOF. We believe that 1. there is a very large commercially-available surplus of summer chum salmon that is being foregone because of king salmon conservation measures and, 2. we believe that a larger portion of this surplus could be taken with the use of purse seines in the Lower Yukon Area than current allowable selective harvest gear, with little or no impact to the incidentally caught king salmon. We are secondarily requesting consideration by the BOF that monofilament be allowed as an option for the material used in the construction of the purse seine web. Currently, the use of mono-filament purse seine web is prohibited under 5 AAC 39.170. Monofilament purse seine web unlawful. The light-weight monofilament web would facilitate the use of purse seines by the relatively small boats used in this fishery and would also have the additional advantage of using smaller mesh size (possibly 2 inches or smaller) so that the risk of gilling non-target fish species, such as Bering cisco and pink salmon, could be substantially reduced. Note that this petition does not ask for consideration of purse seine gear with monofilament web. This petition requests the BOF to consider allowing purse seine gear, regardless of the material used for the web. If purse seine gear is considered and the emergency petition is accepted, then we would like the BOF to consider allowing monofilament purse seine web to the proposal as a secondary item.

We believe that an emergency situation exists because of the following 4 reasons:

1. A very large commercially-available surplus of Yukon River summer chum salmon is not being taken because of the concern over poor king salmon runs;
2. Because of this foregone summer chum salmon harvest there is a resulting very large escapement of summer chum salmon that will negatively impact future runs from parent years 2011-2013 and possibly 2014;

3. The king salmon run in 2014 may be so low that gillnet fisheries in the Yukon Area may not be allowed. Summer chum salmon commercial harvests will be low and possibly lower than in 2013 because of the inefficiency of the current selective harvest gear; and
4. Unforeseen circumstances precluded the use of the legal use of beach seine gear during the summer season in 2013. Few, if any, beach seine sites were available because of normal seasonal high river water levels. We believe that this situation will be a common occurrence in the future.

1. **Emergency Situation:** A very large commercially-available surplus of summer chum salmon is not being taken because of the concern over poor king salmon runs.

**Rationale:** The summer chum and king salmon runs into the Yukon River have very similar run timing, making selective harvest management extremely difficult and nearly impossible with gillnets. Accordingly, directed summer chum salmon gillnet fisheries have been severely curtailed and nearly eliminated to protect the poor king salmon runs from incidental harvest in these fisheries. This management strategy has resulted in extremely large commercially-available Yukon River summer chum salmon surpluses not being harvested. Specifically, because of the concern for king salmon, the commercial summer chum salmon fishery was severely curtailed starting in 2009. During 2011 and 2012, the Alaska Department of Fish and Game (ADF&G) tried very hard to manipulate the District 1 summer chum salmon commercial gillnet fishery with time and area closures to harvest the abundant chum salmon while minimizing the king salmon harvest. However, the use of gillnets to commercially harvest summer chum salmon was initiated only when most of the king salmon had passed out of the area. The fishery in District 2 was further delayed because of the nature of the river, consisting of one channel, and the passage of late arriving king salmon migrating through areas that were not open to fishing in District 1. Although most of the commercial fishing occurred late in the run during these years, thousands of king salmon were still incidentally harvested with gillnets. This level of king salmon harvest was generally deemed unacceptable because of poor king salmon escapements, restrictions on Alaskan subsistence fisheries, and the failure to meet the king salmon commitment to Canada. Additionally, since most of the runs had passed through the Lower Yukon Area before commercial fishing commenced, summer chum salmon harvests were very small in relation to the available surplus and run sizes. Accordingly, in addition to the direct monetary loss to the fishermen, fish buyers and processors found it very difficult to maintain markets for summer chum salmon because of the uncertainty surrounding the fishery timing and harvests.

In the last three years, foregone drainage-wide summer chum salmon commercial harvests have numbered over 1.0M summer chum salmon, with over 1.6M foregone harvest occurring during 2013. In 2013, despite new commercial fishing gear allowed in 2013 by the BOF, nearly 80% of the targeted drainage-wide commercial harvest was not taken because of gear inefficiency, the inability to use beach seine gear, the overriding concern for the king salmon runs, and poor markets in the Upper Yukon Area. Accordingly, because of the low summer chum salmon harvest, the associated value of the commercial fishery was substantially reduced from the potential value. In 2013, the actual value of the District 1 and 2 summer chum salmon fishery was approximately \$1.7M. The potential value of the 2013 District 1 and 2 summer season fishery was in excess of \$6.0M. In 2013, the estimated average income for Lower Yukon Area fishermen in 2013 was only \$4,483 (ADF&G 2013). In contrast, the value of the commercial harvests in the mid 1990s, when king salmon were commercially harvested, was approximately \$15M.

We believe that there is an emergency situation regarding the continuing extremely large foregone summer chum salmon harvest. We also believe that there is a critical need for new selective fishing methods to effectively harvest the abundant summer chum salmon while causing minimal harm to any king salmon captured. Recent research suggests that most non-target fish species, particularly non-target salmon species, can be released to the river alive with little if any

harm (Sandone 2013a). Additionally, the BOF has previously allowed a purse seine salmon fishery to harvest the target salmon species with the stipulation that king salmon over 28 inches in length be returned to the water unharmed (5 AAC 18.395. Retention of king salmon taken in a commercial fishery). Therefore, we suspect that when the BOF passed this regulation, the overriding concern about harm being done to released king salmon from purse seine capture, was minimal. We believe that the use of purse seines in the Lower Yukon Area would serve the dual purpose of selectively harvesting summer chum salmon while allowing the live release of king salmon to the river unharmed.

- 2. **Emergency Situation:** Because of this foregone summer chum salmon harvest there is a resulting very large escapement of summer chum salmon that will negatively impact future runs from parent years 2011-2013 and possibly 2014.

**Rationale:** Foregone harvest resulted in escapements approaching or exceeding 2.0M salmon in the last three years (Figure 1). Based on recent research (Sandone 2013b), we believe that allowing more than 2.0M summer chum salmon to spawn within the Yukon River drainage will be detrimental to future runs and may not provide enough yields to support a commercial fishery and, quite possibly, a full subsistence fishery. According to the *Yukon River Summer Chum Salmon Management Plan* (5 AAC 05.362) the subsistence fishery should have been closed in 2000 and 2001 because the total run sizes in those years were less than the 600,000 salmon threshold to allow for a subsistence fishery to occur (Figure 1).

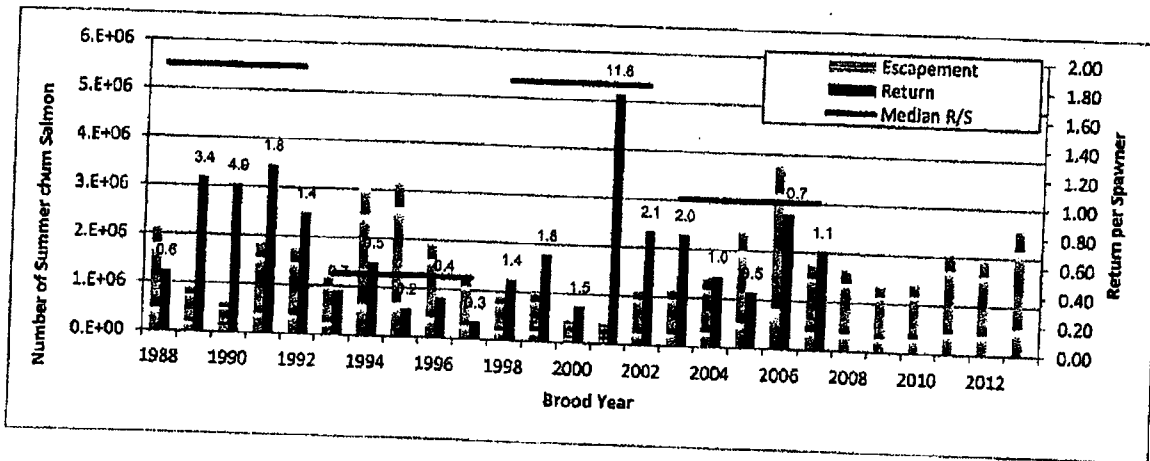


Figure 1. Yukon Area Summer chum salmon escapement (1988-2013), return (1988-2007), return per spawner (1988-2007). Number above the return bar indicates the return per spawner. Horizontal black lines represent the 5-year median return per spawner for the years indicated. (Taken from Sandone 2013).

Poor to below average summer chum salmon runs during the period 1998-2001 were, at least in part, due to the large parent-year escapements in 1994 through 1996 (Figures 1 and 2). These large escapements may have also affected the production of the 1997 brood year (Figures 1 and 2). However, this is speculation and needs more research to determine the affect of large escapements over a number of years on subsequent brood year production.

Note that escapements greater than 2.0M summer chum salmon have not replaced themselves (Figure 2). Note also that it appears that the 5-year cyclical nature of summer chum salmon runs and productivity is most likely based on escapement size, where large runs and escapements are followed by low runs and escapement (Figure 1). There is a cause and effect relationship.

Therefore, we are very concerned about future runs because there has not been a case on record where escapements have approached or exceeded the replacement point for three years in a row. Further, we suspect that the 2014 run, resulting from parent year escapements in 2009 and 2010 (Figure 1) should be similar to the 2013 run, which was over 3.2M salmon. If this occurs and if additional commercial harvest is not allowed by allowing new more efficient gear, we suspect that the 2014 escapement could be at least similar to the 2013 escapement of 2.6M salmon. If this occurs, then escapements would have exceeded the 2.0 replacement point for 4 consecutive years. Accordingly, we believe that an emergency exists because the threat of summer chum salmon escapements exceeding the theoretical replacement point jeopardizes not only future commercial harvests, but possibly subsistence harvests as well, when the progeny from the 2011-2014 parent years return in 2015-2019.

We believe that there is an emergency situation regarding the very large summer chum salmon numbers escaping to spawn within the Yukon River drainage, and the negative impact of these successive extremely large escapements on future returns. We also believe that there is a critical need for new selective fishing methods to effectively harvest the abundant summer chum salmon while causing minimal harm to any king salmon captured. We believe that the use of purse seines in the Lower Yukon Area would serve this dual purpose.

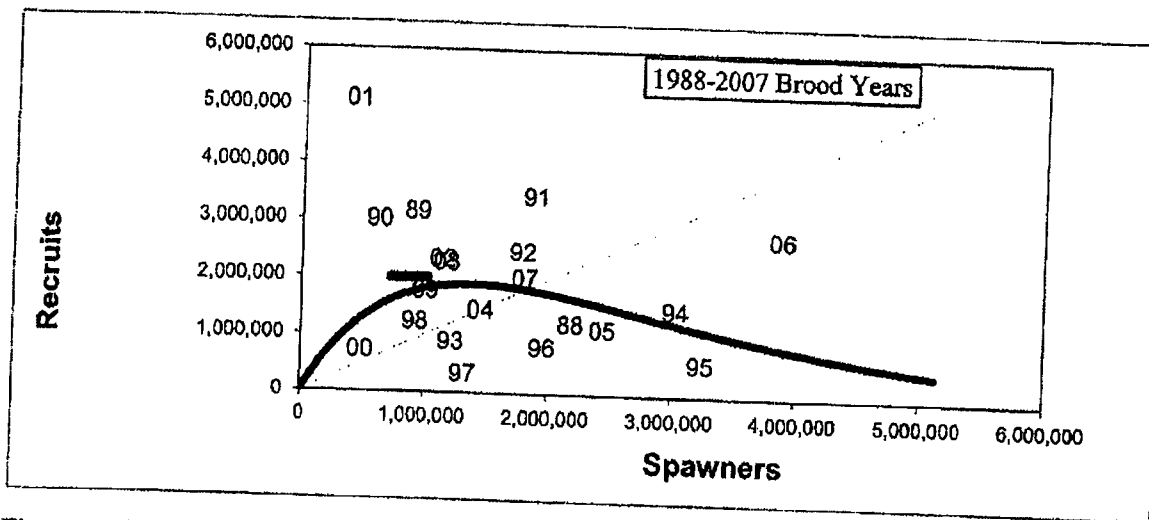


Figure 2. Spawner-Recruit graphic for Yukon River summer chum salmon, brood years: 1988-2007. Note numbers on graph denote the brood year. The dotted line represents the return per spawner of 1.0. The thick short horizontal line indicates the 80% CI of the estimated  $S_{msy}$ . The heavy curved line is the fitted spawner-recruit line through the data points (brood years). Note that in this graph, the replacement point, defined by the intersection of the 1:1 line with the spawner-recruit curve is less than 2.0M salmon. (Taken from Sandone 2013)

3. **Statement:** The king salmon run in 2014 may be so low that gillnet fisheries in the Yukon Area may not be further curtailed or prohibited. Summer chum salmon commercial harvests will be low and possibly lower than in 2013 because of the inefficiency of the current usable selective harvest gear (dipnets).

**Rationale:** The preseason projection for the 2013 king salmon run size was between 98,000 and 114,000 salmon (Figure 3; JTC 2013). Considering that total run sizes observed in recent years have fallen closer to the lower end of their respective preseason projection ranges, initial management of the 2013 run was focused on an anticipated total run size of approximately 100,000 (ADF&G 2013). In response, ADF&G initially asked subsistence fishers to limit their harvest of king salmon to 25% of their normal harvest (ADF&G 2013). During the season, subsistence fisheries were severely restricted. Under this conservative management strategy, all three pulses of king salmon were protected by closing subsistence fisheries as the king salmon pulses migrated through Districts 1-5. Very limited fishing was allowed between pulses to harvest the abundant chum salmon, where available, and other resident fish species. Based on the aggressively conservative actions taken in 2013 and inseason harvest reports, ADF&G speculates that the king salmon subsistence harvest may be less than the observed 2012 harvest (ADF&G 2013). If subsistence fishers did indeed take only 25% of their normal harvest, the total 2013 king salmon run was probably not much greater than 80,000 salmon. At this run size level and assuming that half of the run was Canadian-origin, the Canadian component run size probably approached the lower bound of the Interim Management Escapement Goal (IMEG) for Canadian-origin salmon passing into Canada. At this level, there would be very little harvest, if any, available over escapement requirements.

Note that there has been an odd-even year cycle in the king salmon run size, with even years being smaller than the previous odd year's run since 1997 (Figure 3). Therefore, we believe that there is a high probability that the 2014 run will be smaller than the 2013 run. At this run size level, and assuming that 50% of the Yukon River king salmon run is Canadian-origin, even if no Canadian fish were harvested, the low end of the IMEG for escapement in the Yukon River in Canada of 42,500 salmon will not be attained. Therefore, we believe that one of the most likely management scenarios may be to further restrict and limit subsistence fishing time with gillnets. A likely strategy would be to allow subsistence fishing with 4-inch or smaller gear in the hopes that very few king salmon would be harvested using the smaller gear. Fish wheels will probably be manned so that any king salmon caught by the fish wheel could be released. A possible accompanying management strategy would be to preclude or further limit commercial fishing with gillnets of any size in the Lower Yukon Area. Note that we believe that there is probably more damage that occurs to a king salmon caught and released from a fish wheel than caught and released from a purse seine.

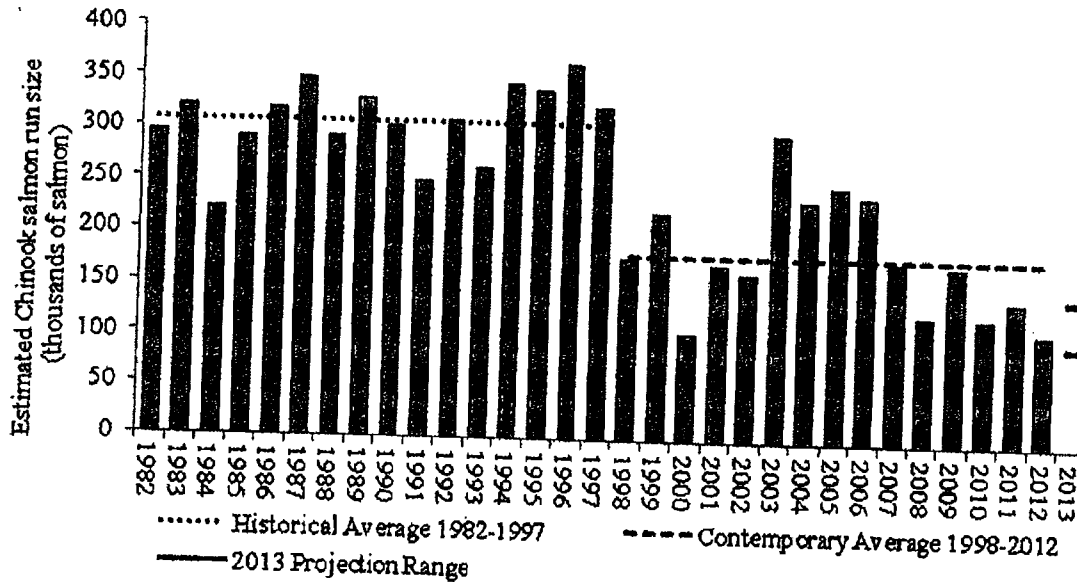


Figure 3. Yukon River King salmon historical estimated total run size and projected run size in 2013, illustrating the drastic decline beginning in 1998. (Taken from JTC 2013).

Last January, the Alaska Board of Fisheries (BOF) adopted new commercial fishing regulations for the Yukon River drainage designed to allow commercial fishing for summer chum salmon regardless of the king salmon run size. These new regulations were employed to allow for the commercial harvest of summer chum salmon even during times when subsistence fishing closures were implemented to protect king salmon. These new regulations gave ADF&G the authority to allow commercial fishing for chum salmon with dip nets and beach seines. Unlike gillnets, the use of dipnets and beach seines allow the live release of king salmon when king conservation measures are necessary. However, dipnets are very inefficient at catching salmon and the use of beach seines were precluded because of the seasonal high water and the resulting lack of suitable beach seine sites. Last year, catch per hour per fisher for the dipnet harvest in District 1 and 2 combined was 0.33 salmon/hour/delivery; for the 5.5 inch/30 mesh deep nets it was 3.90 salmon/hour/delivery; for the 6.0 inch/50 mesh deep gillnets it was 1.45 salmon/hour/delivery. Note that there were many more fish available for harvest during the dipnet fishery, which was conducted during the mid-50%, or peak, of the summer chum run. The gillnet fisheries occurred during the last quarter of the summer chum run or later, with the 6.0 inch/50 mesh deep nets occurring very late in the season. A gross estimate of the exploitation rates associated with these fisheries are: ~9% for the dipnet fishery; ~14% for the 5.5 in/30 mesh deep gillnet fishery; and ~36% for the 6.0 in/50 mesh deep gillnet fishery. In 2013, the overall District 1 and 2 target commercial exploitation rate was over 41%; the actual commercial exploitation rate was approximately 12%. Another negative ramification of the inefficiency of the dip net gear type was the low participation in this fishery. A total of 384 permit holders fished in the Lower Yukon Area in 2013, which was approximately 22% below the 2003–2012 average of 489 (ADF&G 2013). This total number of permit holders includes all gear types.

Although the target drainage-wide commercial exploitation rate was over 65% or over 2.1M salmon, the actual drainage-wide commercial exploitation rate was only 15%, or 486,000 salmon. While District 1 and District 2 harvested about 29% of their allocation, which translates into a commercial exploitation rate of 12%, the upper river harvested only about 14% of their allocation with an associated commercial exploitation rate of approximately 3%. Approximately 1.0M salmon available for harvest in the Lower Yukon Area were allowed to pass through the fishery and arrive on the spawning grounds. Foregone harvest allocated to the Upper Yukon Area was approximately 600,000 salmon. Although the exploitation rate using these new gear types in the Lower Yukon Area was dismal, their use did prevent a complete failure of the commercial summer chum salmon fishery. Dipnet gear accounted for 50% of the total District 1 and 2 commercial harvest, while 5.5 inch/30 mesh gillnet gear accounted for an additional 20%.

We believe that there is an emergency situation regarding the potential further restriction of the directed commercial summer chum salmon gillnet fisheries in the Lower Yukon Area. We also believe that there is a critical need for new selective fishing methods to effectively harvest the abundant summer chum salmon while causing minimal harm to any king salmon captured. We believe that the use of purse seines in the Lower Yukon Area would serve this dual purpose.


4. **Statement:** Unforeseen circumstances precluded the use of the legal use of beach seine gear during the 2013 summer season. Few, if any, beach seine sites are usually available during the summer season because of normal seasonally high river water levels. We believe that this situation will be a common occurrence in the future.

**Rational:** Last January, the Alaska Board of Fisheries (BOF) adopted new commercial fishing regulations for the Yukon River drainage designed to allow commercial fishing for summer chum salmon regardless of the king salmon run size. These new regulations were employed to allow for the commercial harvest of summer chum salmon even during times when subsistence fishing closures were implemented to protect king salmon. These new regulations gave ADF&G the authority to allow commercial fishing for chum salmon with dip nets and beach seines with the live release of king salmon. Based on beach seine test fishing during the fall of 2012, we had great expectations for the use of beach seines to selectively harvest relatively large numbers of summer chum salmon. We did not anticipate that there would be virtually no sites where a beach seine could be legally set because of normally high water during the summer season. Although dipnets were used during the season, there were only rare uses of beach seines because of the lack of adequate seining sites. To legally set and retrieve a beach seine, the seine must be set from and retrieved to a beach. Since there are extremely few sites, if any, where a beach seine could be legally set, we believe that an alternative gear to selectively harvest summer chum would be the purse seine where setting and retrieving is accomplished within the water column of the river. We also believe that live-release of king salmon that are caught in a purse seine would have less negative impact on the fish than those caught in a beach seine. Note also that monofilament is legal beach seine web gear, whereas it is not for purse seine web.

We believe that there is an emergency situation regarding the lack of adequate sites to legal set and retrieve a beach seine, thereby precluding the use of a gear type that had great potential to harvest large numbers of summer chum salmon. We also believe that the use of purse seine gear would be an acceptable substitute for the unusable beach seine gear. We further believe that there is a critical need for new selective fishing methods to effectively harvest the abundant summer chum salmon while causing minimal harm to any king salmon captured. We believe that the use of purse seines in the Lower Yukon Area would serve all these purposes.

In conclusion, we believe that the above outlined statements present an unforeseen and unexpected events which precludes the taking of a biologically allowable resource harvest by delayed regulatory action (#1, 3, and 4) and possibly threatens the resource (#2) to the extent that the allowable resource harvest in the future may not be available. We sincerely appreciate this opportunity to request consideration of this emergency petition to the BOF and provide the associated information in support of the statements above which we consider emergency situations. We encourage the BOF to consider each statement alone but also in conjunction with the other statements, as a whole. We would be more than happy to provide you with any literature, analysis, or other documents that are either cited in this letter or used to support the associated statement rationale.

Sincerely,



Ragnar Alstrom  
Executive Director



**LITERATURE CITED**

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