

## Tanana - Rampart - Manley State Advisory Committee Opinion Paper and Related Data for 2010 AYK Board of Fisheries Meeting

At our meeting held on Nov. 4, 2009, all 6 members present voted to have this paper represent their view before the Board of Fisheries in January 2010. All 6 members are from households actively engaging in subsistence fishing and 5 members hold commercial limited entry fishing permits.

Chinook data collection projects were started in our area years ago in response to the growing concerns of fishermen that average Chinook size was getting smaller, there were few older age class fish being caught, and that females were often very limited in fishers catches. Also Ichthyophonous disease was being found in a significant percent of the population, especially in the larger Chinook. All these issues have direct effects on the quality of escapement and future health of the Chinook fishery and it was decided that collection of full season data for multiple years would aid in understanding the issues and problem solving in the future.

The following Chinook weight, length, sex and disease data were randomly collected over the entire run each year. Sampling only took place out of well-established Chinook fish wheel sites. The sites are extremely stable with hard rock bottoms and wheel positions did not change from year to year. Data was collected by students and their adult supervisors at Rampart Rapids 40 miles upriver of the village of Tanana. "Rapids" is located right in the middle of the state and Chinook passing there are primarily bound for Canadian spawning grounds.



### **The Past:**

Around the early 1990's and prior, it was common for Rampart, Tanana and Rapids fishwheel fishermen who fished the whole season to catch one or more 50 pound Chinook salmon each year, and 30-35 pound fish were common and not considered to be exceptionally large back then. Of note is the fact that prior to that time, Rapids commercial fish buyers would only buy 14 lb kings and larger as a matter of policy. Then it went to 12 lb and 10 lb minimum and now, except for grayling size king, fishers sell any size.

### **The Present:**

Prior to the 2009 season the same fishermen, fishing the same gear as then, have been getting about an 11.6 lb average for the previous 5 years. Out of 5,144 Chinook measured by the student data collection project at Rapids in these 5 years, a single 49.5 lb fish is the largest with the next largest being only 38 lbs.

After 1137 samplings in 2008 only 6 were over 30 lbs. and average weight for all was 11.7 lbs. Sampling done further upriver at Eagle in 2006 shows even lower averages, of less than 10 lbs. This is getting closer to the average weight for chum salmon not king.

**In 2009:**

In 2009 because both Lower Yukon assessment projects recorded very low Chinook numbers, a complete commercial closure, severe subsistence restrictions, and a complete 10 day subsistence closure of the 1<sup>st</sup> pulse and some of the second pulse was instituted. As you can see from the data below and in Table 1 there was a dramatic increase in the average size of king salmon passing into the upper river that had not been seen in years. Female rates were also higher. Overwhelmingly, fishers on the Koyukuk River and upper Yukon also reported the best fishing in many years when openings did occur.

This is significant because it shows that we can indeed do something about the poor runs. If we can turn one of the poorest runs recorded at the mouth into one that not only met border escapement but did it with some of the best quality female rates and size in years just think what we could have done with some of those larger runs of the past when problems were starting.

Of interest below was how the weight of king changed after the 2009 10 day closure was over and the open part of the second pulse arrived (king got smaller), which was the period that fishermen opened on after waiting 10 closed days to fish.

The 2008 1<sup>st</sup> pulse is thrown in for comparison:

2009 Pulse 1 (fully protected)	2008 Pulse 1 (fully open)
- Average weight - 14.5 lbs	- Average weight - 9.7 lbs
- Percent female - 29%	- Percent female - 7%
2009 Pulse 2 (protected period 7/9 - 7/11)	2009 Pulse 2 (open period 7/11 - 7/14)
- Average weight - 14.5 lbs	- Average weight - 11.7 lbs

Anecdotal information from fishermen and data collected by the Rapids Data Collection project show pulse 1 each year lately, having very poor size and numbers of female king salmon. That this is also the part of the run each year that is most heavily fished downriver is probably not a coincidence.

**Why is this something new?**

There was a long period in the past when king salmon came in the mouth in large enough numbers and size that 100,000 fish commercial seasons, a full subsistence and customary trade take, and healthy passage into Canada for fishers and escapement was possible. A fish generation later healthy runs came back from that level of harvest. Because of the good size of the runs these large downriver harvests had little effect on upriver areas such as the Koyukuk River, Rapids and Canada which regularly saw large fish and many females. Everyone benefited and times were good.

Now add an emerging disease (ICH) affecting 20 to 50% of the female population (20.1% visible infection in 2009), an obvious decline in king size and therefore eggs put on the spawning ground, a dramatic shift in almost all the fishwheels used in the drainage to large mesh set nets and drift nets, more aggressive counting of king by the most important project on the Yukon (Didson Sonar at Pilot) and an inability of fishers and management to come to grips and deal with these issues and we have the present situation.

Currently: 1. because of the weakness of the actual run size each year, 2. genetic loss of our older age classes, and 3. weakness in numbers of even 20 and 30 lb kings, even limited

subsistence, as reduced as it is from years past, is having a severe effect on just meeting basic escapement.

We have arrived, through our collective inaction, at a time of no commercial fishing and very limited subsistence not because of proposals pushed by upriver complainers and restrictions passed by the Board of Fisheries (not one has ever passed), but because there simply are not the numbers of king to fish on.

**Table 1. Selected 2004 - 2009 Chinook Size/Weight Figures:**

Year	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>
* Total Weight samples	1113	927	737	1230	1137	773
* Average weight for all king	n/a	11.4 lbs	11.9 lbs	12.1 lbs	11.7 lbs	14.4lbs
* Average length - all	67.1cm	68.9cm	69.0cm	71.7cm	70.5cm	75.2cm
* % of king 30 lbs. and over	n/a	.7%	.8%	.8%	.5%	3.1%
* % of king 25 lbs. and over	n/a	2.3%	3.0%	3.4%	2.1%	9.4%

**Table 2. 2009 (773 samples) compared to 2008 (1137 samples)**

	2009	2008
Average weight all	14.4 lbs	11.7 lbs
Average length all	75.2 cm	70.5 cm
Visible ICH all	10.2 %	10.5 %
Visible ICH in 65.5 cm or >	14.2 %	12.1 %
Visible ICH in Male king	11.2 %	7.6 %
Visible ICH in Female king	20.1 %	22.4 %
King 25 lbs or >	73	24
King 30 lbs or >	24	6
Largest king	40.3 lbs	38 lbs.
Percent of females	26.3 %	19.6%

For the past decade net mesh reduction and other proposals have gone before the Board of Fish each cycle as a means of better managing king runs. These were put there by a small number of upper river fishermen who believed that selective large mesh net overfishing was being allowed year after year in the Yukon. All have failed repeatedly each AYK Board cycle.

Since 2007 the USFWS has put some support behind a few similar proposals that are now going before the Federal Subsistence Board and more fishermen riverwide are voicing their concern about smaller king. A significant number of Yukon biologists and managers are privately expressing that much damage has already been done and many generations will be needed to undo what is essentially a genetic shift in age class of Yukon king salmon. The picture below is a complete catch of king from the first pulse in 2008 - these size kings are making up a significant part of fishwheel catches in the upper river as of late.

### **So what can be done?**

We can do what should have been done long ago when the problems first started to emerge. We compensate for them and include that in our management plan.

Instead of lowering management and escapement goals so more fish can be harvested on declining runs we should try to improve the quality of that escapement. Instead of creating more fish by additional counting technology we do it by letting a few more get upriver to spawn, as in 2009.



Most importantly we stop pushing to catch the absolute maximum amount of fish every year. Had we made small adjustments such as reducing mesh size or reducing our 100,000 king commercials by say 30,000 back when the run was healthy but starting to decline, we possibly could have kept passing decent sized fish and female rates into the spawning grounds and avoided where we're at now. Now the runs are so small and size so genetically altered, that even just limited subsistence puts escapement in jeopardy. Fishermen riverwide must push for the adjustments necessary – management as usual will produce more of the same decline. This is difficult as it goes contrary to short term self interests, but our long term interests demand it.

\* Considerable negative comments have been made about the source of this data (fish wheels) in ADF&G reports, at past Board of Fisheries meetings etc. Opponents feel that fish wheels catch mostly the small, male, weak, sick, handicapped, bank orientated, and diseased king compared to the normal king population in the river, nets in general and driftnets. Many variations of this theme have been expressed.

My comment here is that there is no data at all supporting that and there are a number of situations refuting it such as unbiased upper river weir data (Tozitna River – BLM), female and size data taken by DFO Canada at border, a USFWS study on shore based fish wheels vs. off shore drift nets for chum salmon (done 35 miles upriver from the Rapid project), ADF&G's own data from a 2004 Ichthyophonous report and etc.

Finally and most important is to consider just what we are saying - that the same gear in the same sites is presently catching much less of the older age class Chinook, making the whole fishwheel bias argument a irrelevant point.

\* Data in this paper has been taken with care to be unbiased and random and its collection was funded by the AYK Sustainable Salmon Initiative. The analysis and opinions expressed here about this data are the authors (T-R-M AC) only and are not paid for or the result of any US / Canada, Federal or State funding or a request, requirement, or supported by AYK SSI or any other entity.

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