2013 Kenai R. Chinook ER Total Run and Age Class Data Errors

It is the opinion of Kenai Area Fisherman Coalition that significant errors in the estimation of early run Kenai River Chinook salmon by age class is putting the stock in jeopardy. The following data will help explain our concern.

The Alaska Department of Fish and Game published in their comments to the Board of Fisheries that the total run of early run king salmon to the Kenai River in 2013 was 2048 fish (Table 190-1). In contrast, the actual counts of fish passing through the Funny and Killey River weirs in 2013 was 2,908. Tagging information and USF&W estimates also suggests that there is approximately another 37% of the fish in the Killey River that spawn below the weir so you would add another 1,100 to this for a total of 4,008. Telemetry data also suggests that another 25% of the ER spawns in the mainstem and smaller drainages so we would need to add another 1336 to this total. In all, this would suggest an estimated actual ER escapement of around 5,344 which contrasts sharply from the department's total run figure of 2,048.

Therefore, the sonar estimates <u>are not</u> consistent with the weir counts. In 2013 it appears that the Didson sonar counts are less than half the total run estimate. How can this be and what confidence does one have in the sonar counts when this type of difference is documented? Additionally, why is ADF&G insisting on publishing the total return in 2013 as 2048 when in fact, based on empirical weir counts and spawner distribution data from tagging studies, the total return is much higher?

Data published by ADF&G in table 190-2 also indicates the age composition is skewed towards larger fish when in fact the data from the weirs shows that smaller fish made up a higher portion of the return. In 2013 ADF&G reported 550 fish younger than age 1.2 and 1498 older. In contrast, the weir data indicated 1884 fish younger than 1.2 and 1024 older. Because the netting program failed to catch smaller fish ADF&G data would suggest a bias towards more larger fish and thus lead to the wrong conclusion about the number of females and fecundity and ultimately the viability of the stock to move production forward.

The real disparity is evident when one examines the numbers of our larger 1.4 fish the department cites in the age class distribution. They show that 43.9% of the total run is made up of 1.4 fish. If you extrapolate that out over the run of 5,344 you would assume that about 2,350 fish in the run would be of the 1.4 age class. However, in reality the empirical weir counts from the Funny and Killey Rivers only counted 308 age class 1.4 fish. Add another 180 for fish below the Killey weir and your total comes to 488. If these two rivers account for roughly 75% of the total run then where are the other 1,862 age class 1.4 fish?

Why is this important? The lack of proper age class determination impacts the development of brood tables and production curves. The lack of accurate continuity compounds any ability to know what production model is correct to set escapement objectives.

In addition to a counting issue ADF&G has consistently allocated fish caught after July 1st to late run Kenai River chinook. Yet based on genetic data and recent tagging information we now know that a significant portion of fish caught in early July are actually early run fish. This misclassification of fish to the wrong return also impacts brood tables and estimates of harvest rates.

In summary, all of these errors indicate a seriously flawed counting and netting regime and that this situation requires a precautionary management approach. The lack of any confidence in the data sets should move the Board of Fisheries towards a more conservative management strategy.

Our **proposal 219** provides increased spawning certainty and moves us in the right direction to accomplish this goal by reducing the impacts and future implications of sonar related data irregularities.

KAFC – Kenai Area Fisherman's Coalition