

RC 69

Issues Concerning Salmon Yields in Upper Cook Inlet, Alaska



United Cook Inlet Drift Association

September 2019



VIII. Sockeye Salmon MEFL, Drift Gillnet Fishery, 1992-2018

Figures 11A – 11C

Figure 11A is the MEFL for the 1.3 (5 year) age class. Figure 11A displays 5-year old sockeyes taken from the drift fleet harvests that include all 23 UCI stocks. The 1.3 age class that returned in 2006 were from the 2001 brood year.

Figure 11B is the MEFL for the 2.3 (6 year) age class. Figure 11B displays 6 year-old sockeyes taken from drift fleet harvests and includes all 23 UCI sockeye stocks. The 2.3 age class in 2006 show some minor changes in MEFL. However, in the 2006 run, these reduced lengths of 564 mm in the 2.3 age class is not as pronounced when compared to the length of 549 mm in the 1.3 age class. The 1.3 and 2.3 age classes are from different brood years. However, both of these brood years smolted and reared in ocean environments at the same time.

Figure 11C displays the MEFL taken from the drift gillnet harvest for the age class 1.3 and the 2.3 sockeye salmon 1992 – 2018. This 1.3 age class of sockeye salmon averaged 571 MEFL during this time period. All 23 major sockeye salmon stocks natal to UCI are included. The average MEFL of 571 applies to both age classes. Even though there is some yearly variations between the two age classes, the average MEFL is nearly identical.

These two age classes smolted with different weights and lengths only to return as adults with virtually identical MEFL of 571.

The 2006 and 2015 through 2019 runs all had large August sonar passage patterns. Since 2012, there has been a significant decline in the MEFLs.

X It has been reported by many fishermen and processors that the 2019 sockeye salmon had numerous (10-200) red-colored, maybe infected, spotted areas randomly occurring on the sides of these fish. Additionally, less than 10% of these spotted sockeyes had gray-colored, mushy flesh. These spotted sockeye appeared to show up in the August 2019 catches.

- B. There is no reliable mathematical or statistical transformation to correct this \pm variance in the Bendix estimates or 'fish counts'.
- C. The Bendix derived fish counts are reported to the single fish, giving a representation of accuracy that simply does not exist.
- D. There is no reliable understanding of the distribution of the \pm 20% variance across hours, days, years or passage rates.
- E. The DIDSON derived passage estimates have not had an independent assessment as to the accuracy of passage over time or accuracy of passage density.
- F. The DIDSON produced hourly estimates of fish passage rates, however, the hourly rates were combined to arrive at the daily passage rate. No internal verification occurred concerning these hourly to daily passage rates.
- G. The Markov Table, by using 100,000 fish increments, does provide up to a 100,000 fish variance estimate.
- H. None of the escapement goal methodologies consider the actual ^e empirical date:
- Declining sockeye MEFL of 15-20%
 - Declining sockeye weight of 15-20%
 - August entry pattern of 60% for KRLRS
 - Degraded fish quality, including the presence of surface infected areas associated with scale loss and mushy, gray colored flesh.

3. Biological Issues

Some of these issues are directly linked to anthropogenic management decisions, practices and policies. The specific issues put forward included:

- A. Over the past decade, the sockeye in UCI are shorter in length by 15-20%.
- B. UCI sockeye salmon weights have decreased by 1 lb per sockeye. See economic discussion for significance.
- C. An August portion of the KRLRS have gray-colored, mushy flesh. The eggs in these fish remain undeveloped and are noticeably smaller than usual. See economic discussion for significance.

absence of the sockeye salmon over 6 lbs has taken Cook Inlet out of the premium market. Now, UCI sockeye are competing with the marketplace where 3-5 and 4-6 lb sockeye are plentiful. Cook Inlet has lost the premium market position.

X B. The August component of the sockeye harvest no longer are graded #1; now it's mostly #2 and dog food grades. Annually, the August sockeye component costs the industry in excess of \$2 million.

C. The smaller sockeye and lower grade sockeye cost the industry \$14 million annually. Historically, UCI salmon were of premium size and quality worth 50-75¢ more per pound than Bristol Bay. This diminished sockeye size and quality has had negative effects on Chinook, Chums, Pinks, and Silvers, even though the size and quality issue was less pronounced. This \$14 million in diminished economic activity spill over into the retail, transportation, local, state and national taxes paid. Crew members, process workers and labor markets become less attractive making the hiring of entry-level labor much more difficult. Capital investments are restructured and redirected. These costs are real and difficult to quantify.

D. Tables 16A and 16B provide the total ex-vessel value, adjusted for inflation value and the first wholesale value of all salmon harvested by the UCI commercial salmon industry, 1960-2018. The ex-vessel total values were normalized by using the US Inflation Calculator found at www.usinflationcalculator.com, published by the US Dept. of Commerce. The ex-vessel total values are the result of lbs of salmon sold at a given price per pound. In the 2000-2009 decade, salmon prices were severely depressed.