Submitted by:
Central Peninsula AC
David Martin

RC 079

Susitna Sockeye Stock of Yield Concern

Background

During the 2008 Board of Fisheries (BOF) meeting Susitna sockeye were designated a Stock of Yield Concern due to a chronic inability to meet the Yentna SEG (range 90-160,000) as measured by sonar. Sonar enumeration of salmon escapement into the Susitna system began in 1981 using the Bendix sonar and in 2006 with the DIDSON sonar system. Considerable uncertainty was associated with the escapement assessment so in 2006 ADF&G initiated a three-year study using alternative methods including weir counts and mark-recapture.

In 2009 ADFG released a special report outside of the normal three year cycle of escapement goal review because the errors with the sonar enumeration were so significant. The results of the study suggested that both the Bendix and DIDSON were grossly underestimating the number of sockeye salmon spawning in the Yentna River.

Fair, L. F., T. M. Willette, and J. Erickson. 2009. Escapement goal review for Susitna River sockeye salmon, 2009. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-01, Anchorage.

The report recommended eliminating the Yentna SEG and replacing it with SEG's for 3 individual lakes (Chelatna, Judd and Larson) in the Susitna watershed. The new escapement goals became effective for the 2009 salmon runs.

Some estimates suggest the sonar count (dating back to 1981) was biased low by as much as 50 to 100 percent. While it is not possible to go back and re-calculate accurate figures, it is evident that escapement goals were being met and likely exceeded.

In 2011 the Board of Fisheries, now aware that Susitna sockeye no longer met the criteria for a Stock of Concern, left the designation in place and enacted regulations to further restrict the Central District drift fleet in an attempt to reduce the yield (harvest) of northern bound stocks.

2013

In a memorandum to the BOF dated October 13, 2013, the ADF&G recommended that Susitna River sockeye salmon remain classified as a stock of yield concern because:

1) Five of the escapements in 3 different lakes (out of 15 total) have been below the minimum goal, and

2) Harvests in Central and Northern districts from 2008 through 2013 were generally less than the long-term averages.

Their justification was that in the Central District drift fishery, Susitna median yield (harvest) estimates in 2008–2013 were 26% larger than those from 2003–2007, and about 75% of those from 1983–2002 and 1993–2002, the two time periods to which recent (2003–2007) yields (harvest) were compared when determining the stock of yield-concern in February 2008.

The first glaring error with this justification is that the Department has no reliable data for run size, escapement or yield from 1981-2013 as the sonar counters used until 2008 were so inaccurate that the data cannot be used and there is still no reliable method for counting all the salmon that return to Mat-Su streams. Without some reasonably accurate method for enumerating salmon escapement they have no way to determine the yield (harvest) as a percentage of run size.

The attempt to use reduced median yield (harvest) estimates as a justification for maintaining a Stock of Concern classification also fails as it does not recognize that there were new management regulations for the Central District drift fishery from 2008-2013 that were intended to reduce the yield (harvest). This application of circular logic has no business masquerading as science.

What does it mean? If the median yield (harvest) estimates from 2008-2013 were 26% larger than the 2003-2007 time period as the Department stated, then either the restrictions on the drift fishery are not effective at conserving particular stocks, or, these stocks are much more robust than were assumed. An alternative explanation is that the ADF&G engaged in a deliberate fabrication as they are using yields for comparison from a time period for which they have no reliable data.

The methodology of using combined escapement counts from three different lakes does not fit the criteria for a Stock of Yield Concern. The escapement goals for these 3 lakes (Chelatna, Judd and Larson) do need to be re-evaluated as the returns to Chelatna and Judd are showing oscillating patterns in their sockeye populations from year to year, a classic indicator of over-escapement. In Judd Lake the fry size and weight suggest they are exceeding the rearing capacity of the lake and are near starvation. The Chelatna Lake escapement goal has been met four of the past five years, Judd Lake two of the past five years, and Larson Lake four of the past five years.

The October 13, 2013 memo from ADF&G to the BOF also failed to factor the increasing sport fish harvest into the yield (harvest). During the same time period, 2008-2013, while restrictions were placed on the commercial fisheries (both Central and Northern District) for conservation purposes, the sport fishery yield (harvest) had no similar restrictions and continued to increase.

The Departments memo also fails to account for declining salmon production capacity in the Mat-Su basin due to invasive Northern Pike, beaver dams, parasites, culverts and other deleterious effects of urbanization. As of 2010, the ADF&G had identified 135 lakes, rivers and streams in the Mat-Su basin as pike infested. A recent report published in 2013, (A Watershed Perspective of Salmon Production in the Mat-Su Basin) compiles much of the available information regarding declining salmon populations in a readable format.

Summary

- Sonar counts from 1981-2008 were inaccurate and biased low.
- Stock of Yield Concern for Susitna sockeye was based on this bad data.
- Restrictions placed on the Drift Fleet and Northern District set nets for over 20 years were based on this bad data.
- Restrictions placed on commercial fisheries under the guise of conservation were not paired with restrictions on the sport fishery.
- Problems with Susitna salmon production have been identified and are the result of freshwater habitat issues.
- Intensive management of saltwater fisheries will never solve the problems found in the freshwater habitats of spawning and rearing salmon.

Stock of concern – yield vs management vs conservation

*"A stock of **yield** concern is defined as "a concern arising from a chronic inability, despite the use of specific management measures, to maintain specific yields, or harvestable surpluses, above a stock's escapement needs; a yield concern is less severe than a management concern" (5 AAC 39.222(f)(42)).The SSFP defines chronic inability as "the continuing or anticipated inability to meet expected yields over a 4 to 5 year period.""*

*"A stock of **management** concern is defined as "a concern arising from a chronic inability, despite the use of specific management measures, to maintain escapements for a salmon stock within the bounds of the SEG, BEG, OEG, or other specified management objectives for the fishery; a management concern is not as severe as a conservation concern." (5 AAC 39.222(f)(21))"*

*"A stock of **conservation** concern is defined as "a concern arising from a chronic inability, despite the use of specific management measures, to maintain escapements for a stock above a sustained escapement threshold (SET); a conservation concern is more severe than a management concern." (5 AAC 39.222(f)(6))"*

END