

Additional Information germane to Non-local harvest of Sockeye Salmon in the Kodiak Management Area (Proposals 64, 65 and 66).

Submitted by Kodiak Salmon Work Group

- Vining (1996) using average weights of sockeye salmon catches in the KMA generated estimates of non-local harvests of sockeye by year 1983-1995). Although not precise, they represent the longest time series of estimates available. Shedd et al. 2016 did the same for the sockeye harvests using GSI for the years 2014-2016.
- Using total harvest as a proxy for Total run to UCI, Table 1 compares the estimated nonlocal harvest in the KMA to the total UCI sockeye salmon harvest by year excluding harvests within the Cape Igvak Section.

Table 1.- Kodiak area harvests of non-Kodiak sockeye salmon and Upper Cook Inlet harvests of total sockeye salmon from 1983 to 1988, 1990 to 1995 and 2014 to 2016.

Year	Sockeye harvest	
	Kodiak (Non-Kodiak fish ^a)	Upper Cook Inlet (Total harvest ^b)
1983	82,740	5,049,733
1984	75,054	2,106,714
1985	51,634	4,060,429
1986	76,401	4,792,072
1987	267,806	9,469,248
1988	927,002	6,843,833
1990	303,322	3,604,710
1991	252,177	2,178,797
1992	1,448,165	9,108,353
1993	625,624	4,755,344
1994	130,225	3,565,609
1995	224,014	2,952,096
2014	58,506	3,360,383
2015	438,443	3,694,270
2016	309,497	3,095,833

^a The Kodiak harvest of non-Kodiak sockeye salmon was determined using average weight information gathered 1983 to 1988 and 1990 to 1995 (Vining 1996) and genetic information from 2014 to 2016 (Shedd et al. 2016).

^a The Upper Cook Inlet harvest was determined using commercial fish tickets 1983 to 1988, 1990 to 1995 and 2014 to 2016 (Shields and Frothingham 2018).

- Over all years the KMA harvest of nonlocal stocks average 6.9% of the total UCI harvest ranging from <1.0% (1983,1985 and 1986) to 15.8% (1992). This cannot be managed for with any certainty in either Area.

- If the percent of harvest was expressed as a harvest rate the percentages would be reduced. Harvest rates can be a valuable metric for salmon managers and researchers, however owing to incomplete nature of the escapement estimates in Cook Inlet this exercise was not completed.
- The magnitude of the nonlocal harvest relative to UCI abundance (as represented by total UCI sockeye harvest) is somewhat correlated (Correlation Coefficient of 0.62 ($p=0.01$) for all years included (1983-1995, 2014-2016).
- However, if the three years having the largest harvests in Kodiak and UCI are removed (1988, 1992, 1993) the correlation coefficient drops to 0.06 ($p=0.85$) indicating there is little if any correlation between harvest magnitude in Kodiak and abundance of UCI sockeye; this indicates that perhaps environmental factors (wind and wind direction, sea surface temperature, and prevailing climatic conditions) play a larger role than does overall abundance of UCI sockeye salmon.