

## Historical Statewide and Cook Inlet Salmon Harvests

The following is a review of the historical commercial harvests of wild salmon for the State of Alaska and Cook Inlet. Included are discussions and figures for all six species from the late 19<sup>th</sup> century up to present. The data used to generate the figures contained in this letter are from the records kept by the State of Alaska and several Federal Government agencies from 1878 to present. These historic data sets are not always 100% accurate; however, the data files that were used do represent the salmon harvests in the Alaska fisheries. Not all figures start at the same year due to incomplete, lost or missing information. In all cases, over 100 years of harvest data is presented and discussed. In the figures that follow, the historical averages pre and post Magnuson Stevens Act (MSA) have been calculated and presented. For convenience, the date of State management, 1959, has been identified in the figures. The average salmon harvests achieved after the adoption of the 2000 Policy for the Management of Sustainable Salmon Fisheries (2000 SSP) have been calculated and presented. The figures represent harvests of wild salmon unless otherwise noted. These statewide harvest figures include the Cook Inlet harvests.. Note that the scales on the vertical axes change when moving from Statewide to Cook Inlet figures.

### Cook Inlet Salmon Harvests and Returns

The pacific salmon returns to Upper Cook Inlet are among the largest in the nation and represent a valuable economic opportunity capable of providing millions of pounds of food for the nation and are a national treasure. The majority of the sockeye, coho, chum and pink harvests occur or would occur in the EEZ portion of Cook Inlet. These six salmon species populations, as measured at the Anchor Point latitude, 60°46.15'N are as follows:

1. Chinook salmon (*O. tshawytscha*) – among the largest three natural, wild returns in the nation
2. Sockeye salmon (*O. nerka*) – second largest natural, wild return in the nation
3. Coho salmon (*O. kisutch*) – among the three largest natural, wild returns in the nation, with proper management
4. Pink salmon (*O. gorbuscha*) – could be the largest natural wild return in the nation, with proper management
5. Chum salmon (*O. keta*) – could be the largest natural, wild return in the nation, with proper management

- a – SAS = Single Aerial Survey, PAS = Peak Aerial Survey, SFS = Single Foot Survey.
- b – NS = No Survey. Fish required to meet broodstock needs, in addition to meeting escapement goal, include 250 Chinook salmon at Crooked Creek; 10,000 sockeye salmon at the Kasilof River; and 5,000 sockeye salmon at Fish Creek.
- c – Foot survey of McRoberts Creek only, upon which the SEG is based.
- d – Incomplete weir count due to flooding.
- e – Weir inoperable during high water events in 2007; missing counts filled in using proportion of radio tagged fish passing during high water (Fair et al. 2009).
- f – The Crescent River sonar project did not operate in 2009; escapement was estimated using commercial catch and the mean (20012008) harvest rate.
- S – The goal represents total spawner abundance minus sockeye salmon taken for broodstock.
- h – Escapements for these systems use Bendix sonar abundance estimates.

Preliminary estimate of sport harvest upstream of sonar was used.

Figure 1 shows the total commercial harvests of all five salmon species. Please note the dramatic increase in **wild salmon** harvests that have occurred since the implementation of MSA in 1979. This near 100% increase in wild salmon harvests statewide, in part, is due to:

First: MSA establishing the EEZ. This includes the removal of foreign fishing fleets out beyond 200 nautical miles (nm) and the removal of foreign fishing fleets from intercepting salmon on the high seas.

Second: The implementation of National Standards (NS) 1 and 2. This includes escapement goal management based on best available biology and science.

Third: Adaptive near real time management decision making. This involves field biologists making decisions in order to achieve scientific-based escapement goals, as compared to centralized, political-based decision making. These dramatic increases in salmon harvest do not include hatchery or aquaculture-related harvests. This increase in harvests did not occur at Alaska Statehood or as a result of the 2000 SSP.

For twenty years, 1959-1979, immediately following Statehood, the salmon returns continued to decline until the passage of the Magnuson Act in 1976. The development of the Magnuson Act and the National Standards brought about a new era in salmon management policies and management techniques. In 2000, the State adopted the 2000 SSP. As can be seen in Figure 1, in the statewide salmon harvest numbers, there has been a modest benefit. However, all the modest increase is due solely to pink salmon harvests. The pink salmon harvest does include hatchery and aquaculture contributors, see Figure 5 Statewide Harvests. It is very difficult to totally separate out the wild aquaculture harvest component.

In Cook Inlet, it is readily apparent that since the adoption of the 2000 SSP, harvests have once again gone into decline, see Figure 1.

Figure 1

All Wild Salmon Harvests Statewide 1880-2011 and Cook Inlet Wild Harvests 1895-2011

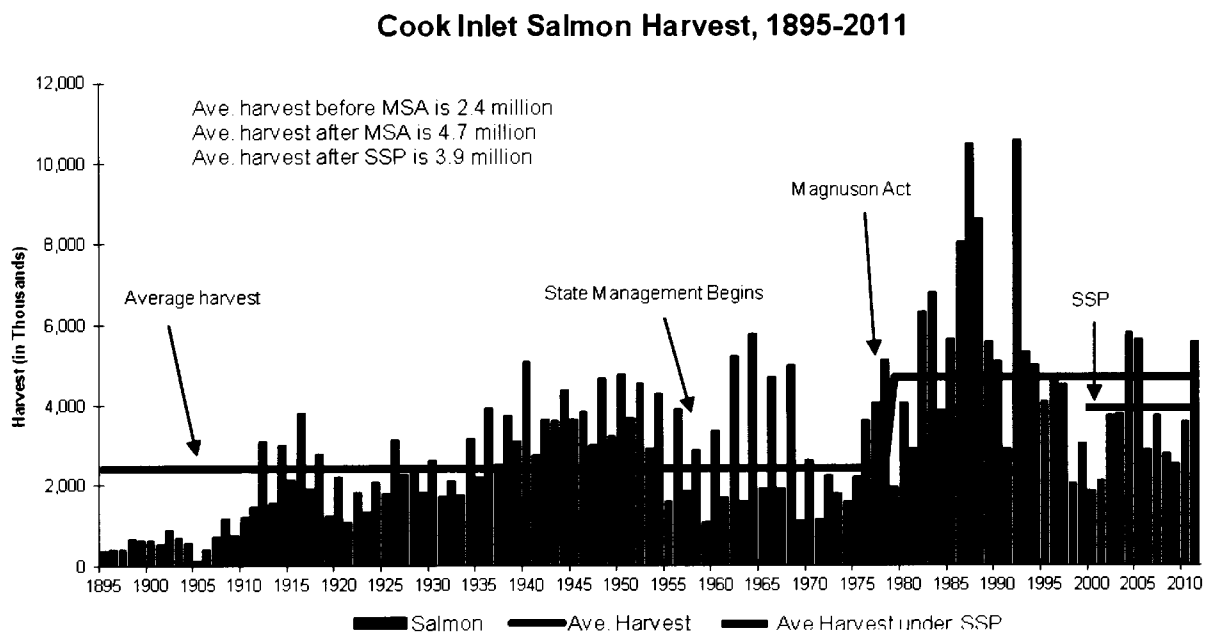
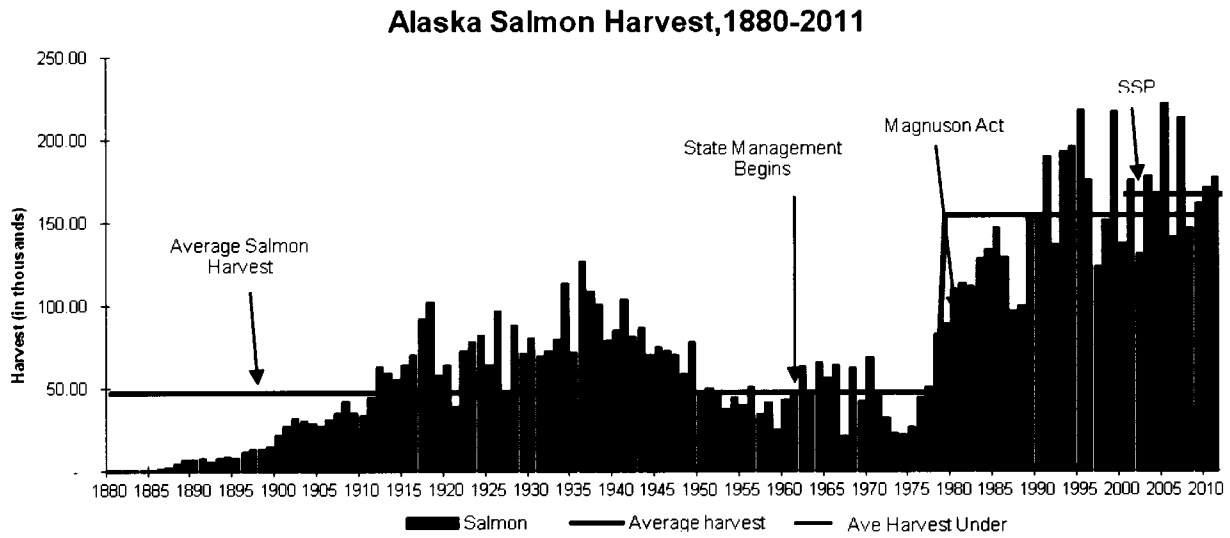


Figure 2

Wild Chinook Harvests Statewide 1880-2011 and Cook Inlet Chinook Harvests 1895-2011

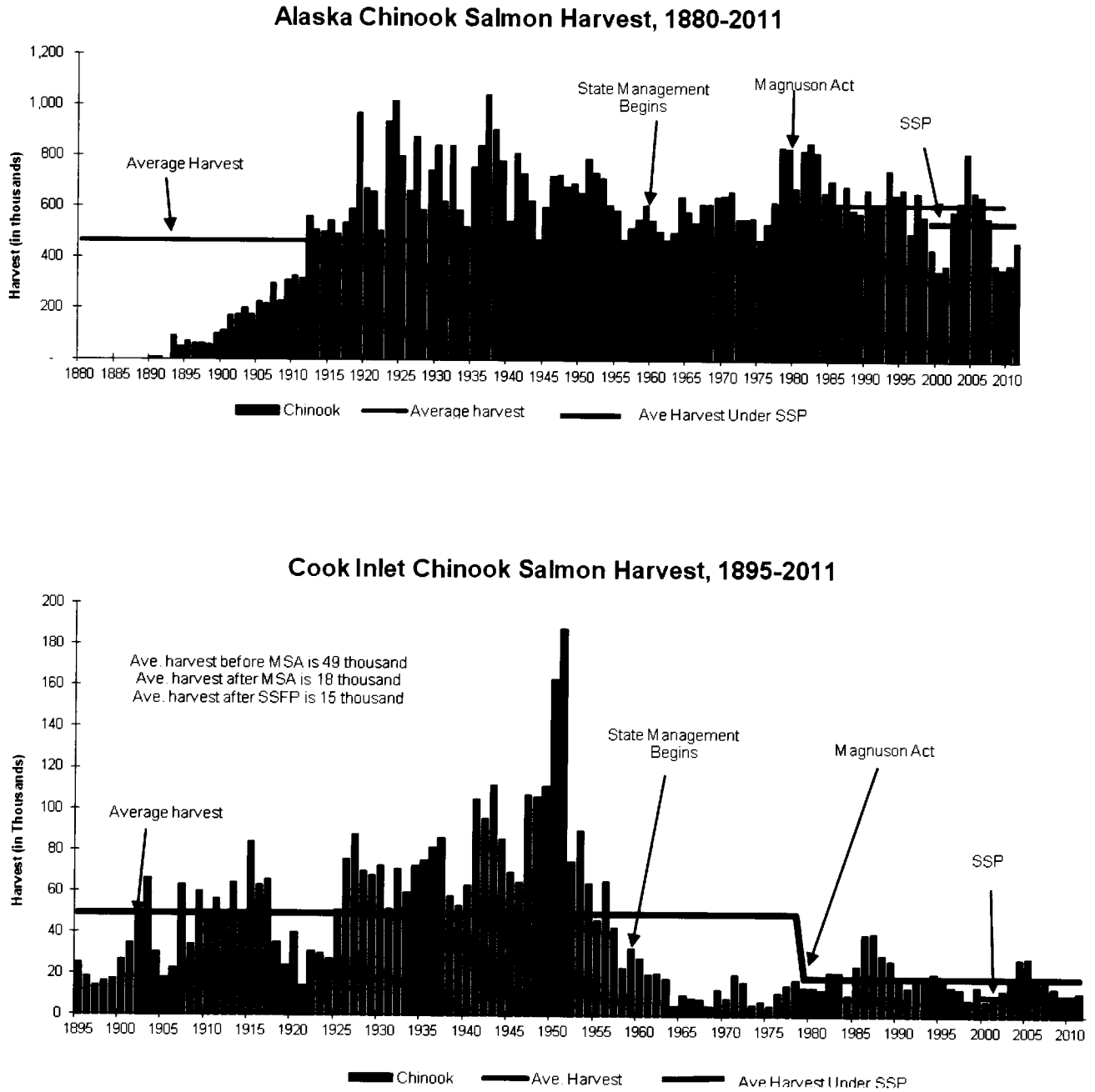


Figure 2 shows the statewide Cook Inlet Chinook salmon harvests from 1895 through 2011. In Figure 2, the harvest should be compared to determine how the statewide Chinook harvests compare to the Cook Inlet Chinook harvests. It is readily apparent that the Chinook salmon commercial harvests in Cook Inlet have seen dramatic reductions just prior to Alaska Statehood and have continued at very low levels, even after the passage of MSA. The large declines in Cook Inlet's Chinook harvests are in sharp contrast to the statewide harvests shown in Figure 2.

Chinook harvests had a slight increase as Magnuson was passed by Congress 1976. Since the State's adoption of the 2000 SSP, there has been an overall decline in harvests. This same pattern of declining harvest since 2000 also occurs in the Cook Inlet Region, some of which can be attributed to allocative decisions. There are also some aquaculture and hatchery productions included in Figure 2.

Currently, there are seven of these Chinook spawning systems that have a "Stock of Concern" designation, meaning that there is a chronic inability to make escapement goal targets. This year additional harvest restrictions have been put in place for most of the remaining Chinook stocks in Cook Inlet.

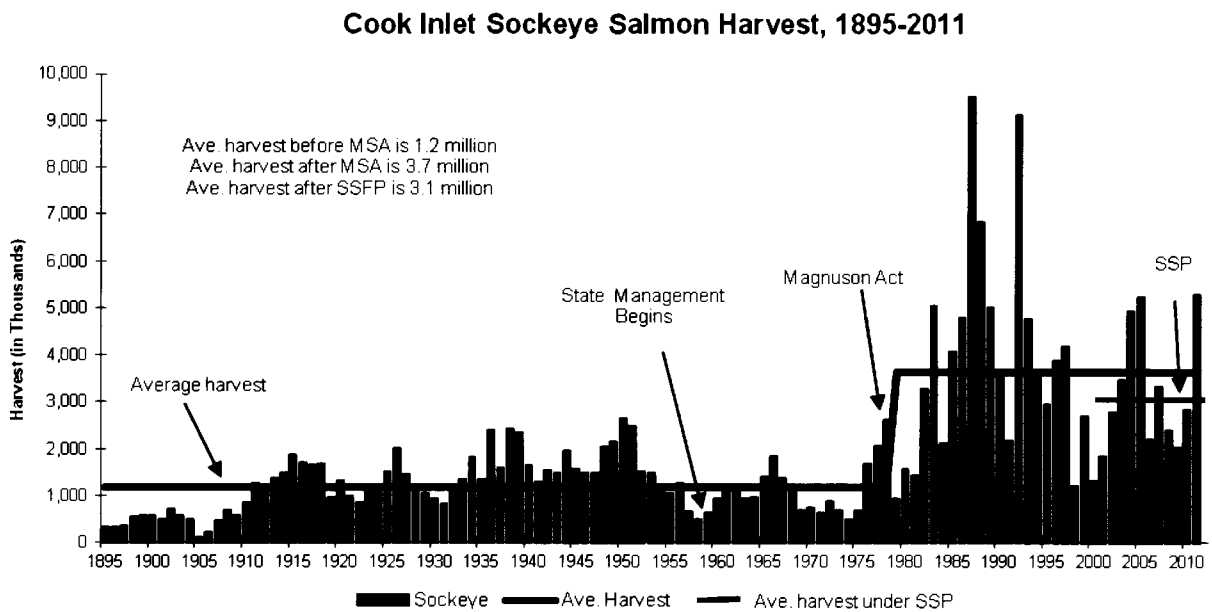
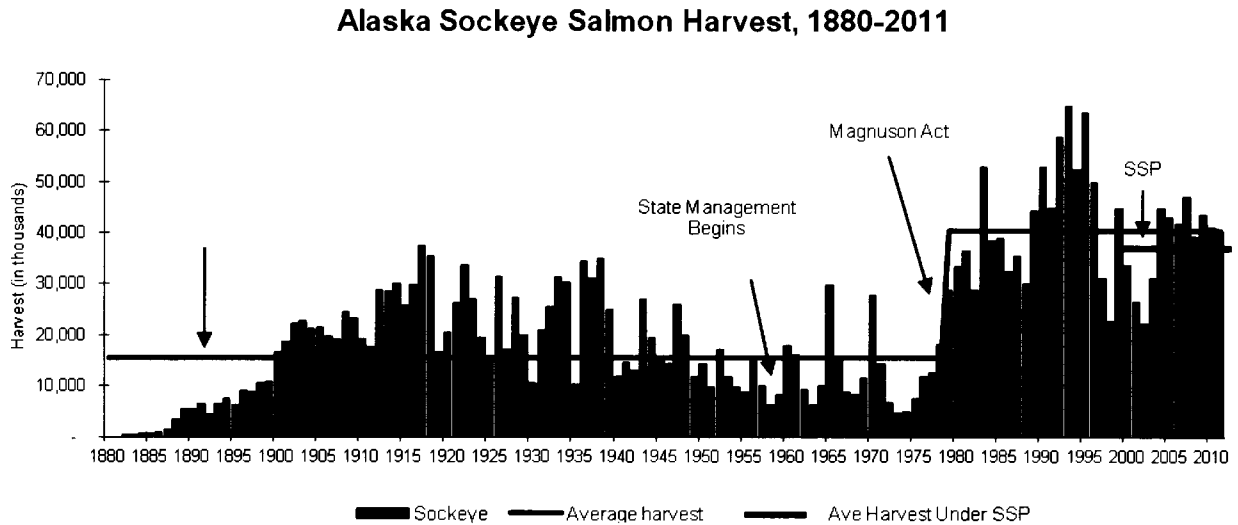
The majority of these stocks spawn on Federal Lands or Waters, National Parks, Wildlife Refuges, wilderness areas, Bureau of Land Management and US Forest Service Lands.

### **Sockeye Salmon**

Figure 3 shows the statewide harvests of wild sockeye salmon from 1880 through 2011. The beginnings of State management in 1959 had, if anything, a depressing effect on sockeye harvests. During 1972 through 1975 some of the lowest sockeye harvests occurred. Once MSA was passed by Congress, immediately sockeye harvests in Alaska started to have dramatic increases and have continued strong. The passage of the 2000 SSP by the State appears to be insignificant. It was MSA, the 10 National Standards and science-based, escapement-based management practices that correlate well with the dramatic increase in sockeye harvests.

Figure 3

Wild Sockeye Salmon Harvests Statewide 1880-2011 and Cook Inlet Harvests 1895-2011



Sockeye Salmon returns to Upper Cook Inlet have ranged from 4,000,000 up to 12,000,000 annually during the past half century. There are over 30 – 35 stocks that are included and contribute to these total returns. All the returning sockeyes are natural, wild stocks. These sockeye stocks have the largest range of age composition in the nation. There are 12

Figure 4

Wild Coho Harvests Statewide 1880-2011 and Cook Inlet Coho Harvests 1895-2011

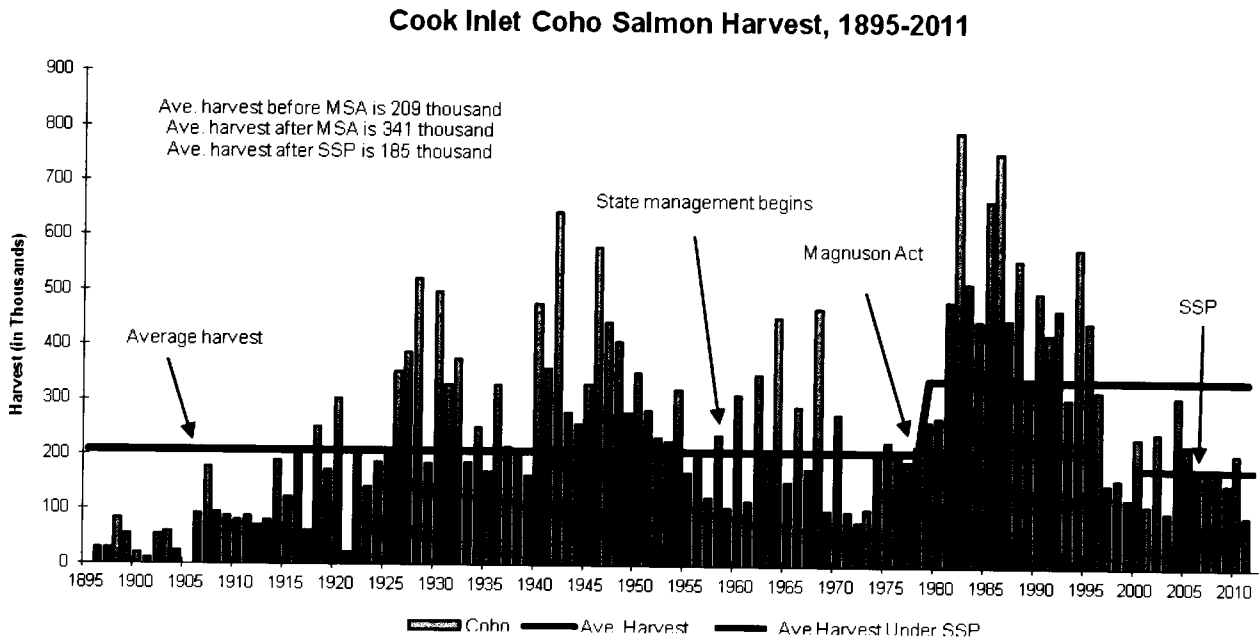
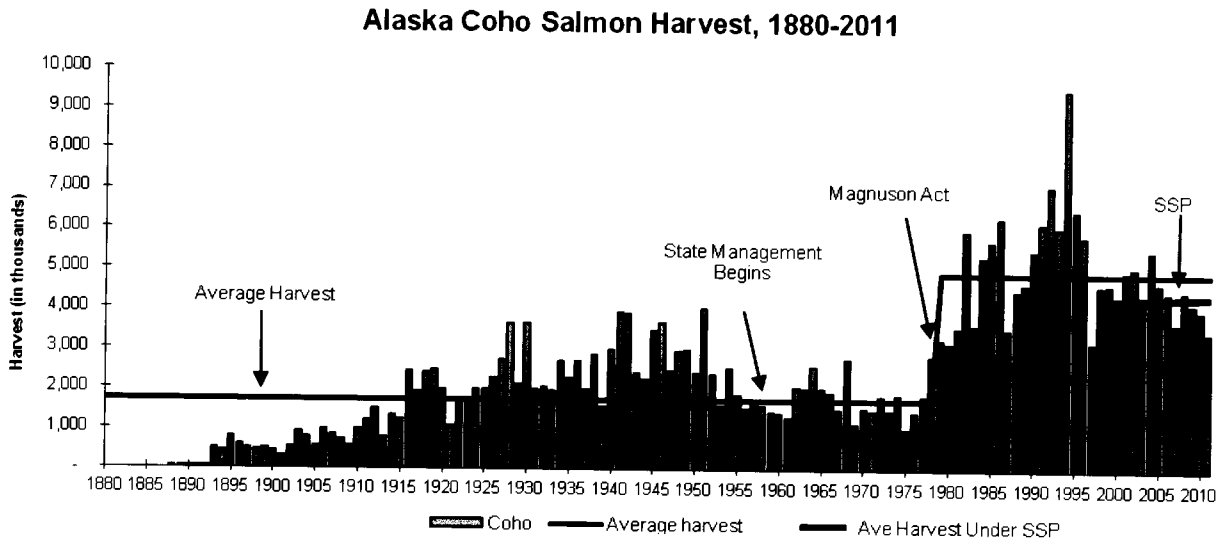


Figure 5

Wild Pink Harvests Statewide 1880-2011 and Cook Inlet Pink Harvests 1895-2011

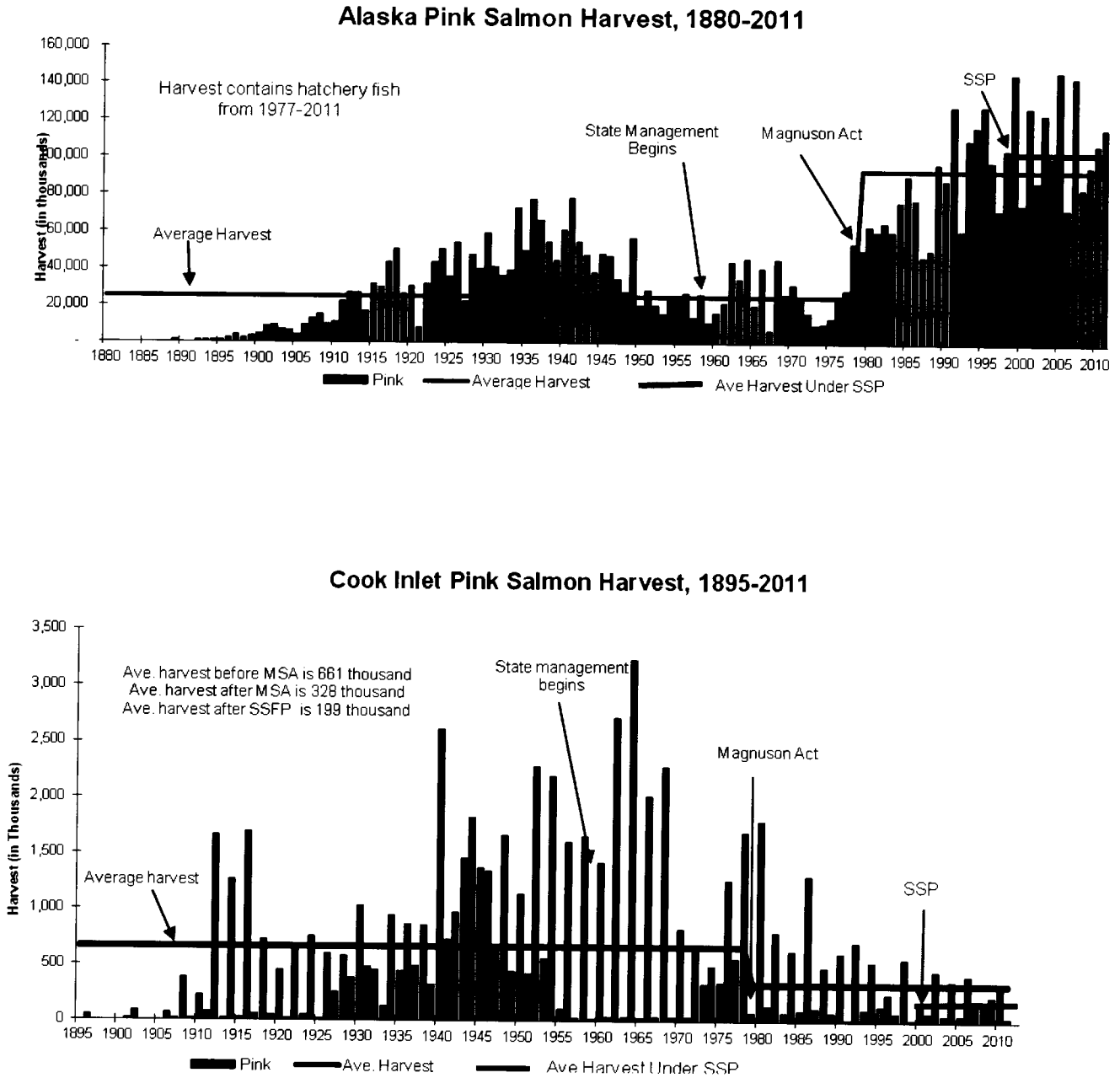
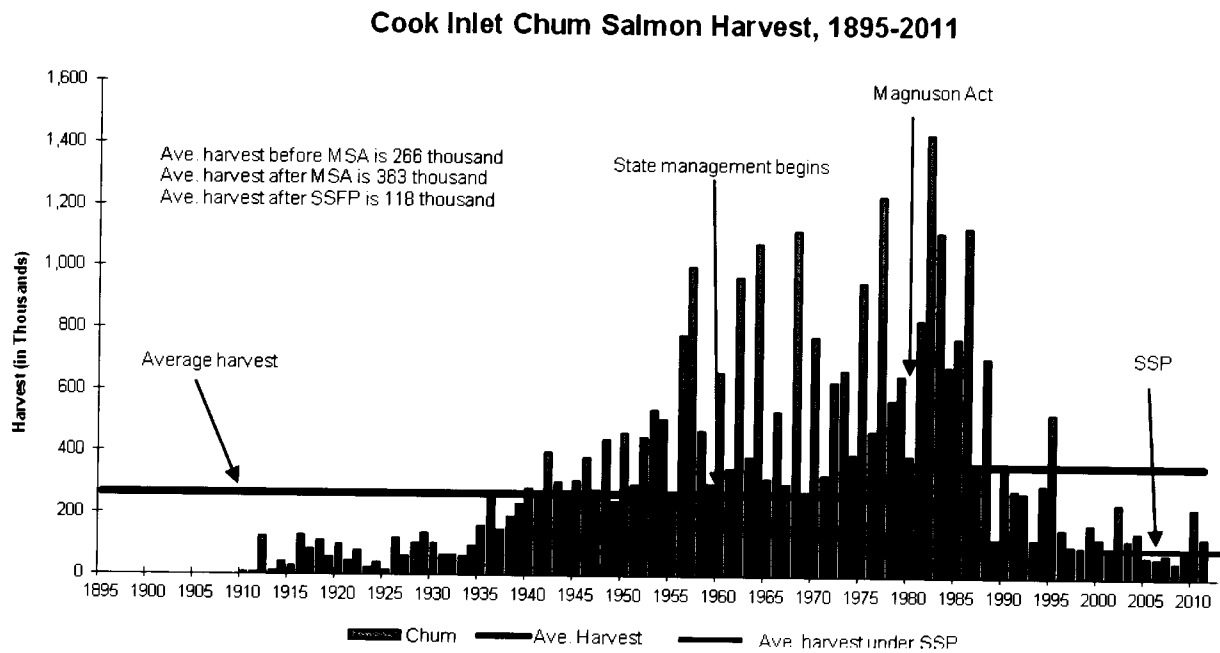
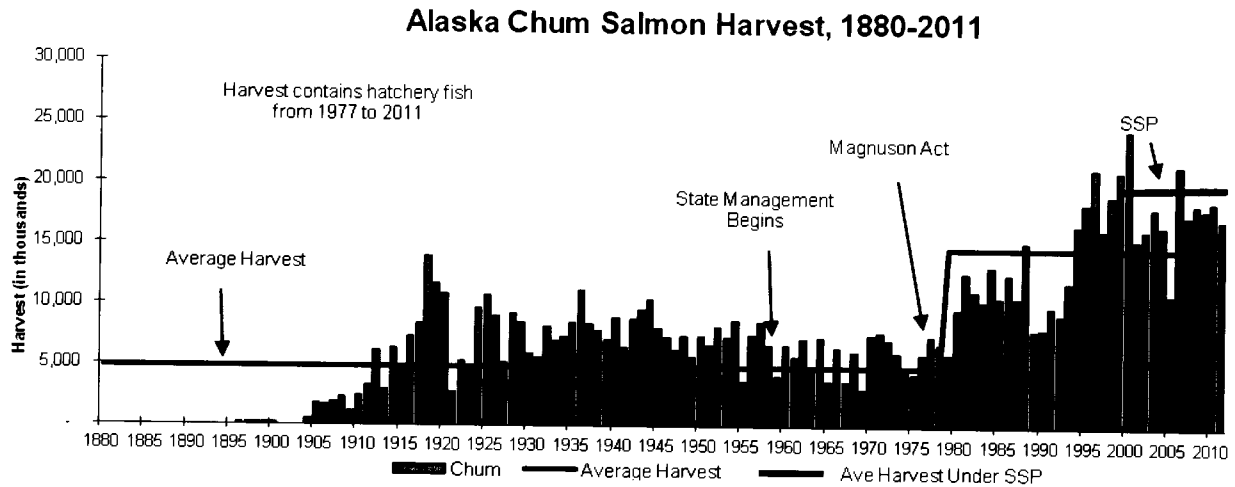


Figure 5 also displays the pink salmon returns to Upper Cook Inlet that are estimated to range from 2,000,000 up to 30,000,000 annually during the past half century. Pink salmon utilize 20 - 25 rivers and streams. In Cook Inlet, there are no formal assessments of return



Figure 6

Wild Chum Harvests Statewide 1880-2011 and Cook Inlet Chum Harvests 1895-2011



## **Steelhead**

There is no reliable statewide data on this species.

Steelhead returns to Upper Cook Inlet have ranged from 1-2 thousand up to 10,000. These returns to the Upper Cook Inlet are at the Northern extent of their distribution. The US Fish and Wildlife Service conducts very limited stock assessments, spawning and rearing studies. There are no marine assessments, no escapement goals and no other studies by the State of Alaska.

The majority of these stocks spawn on Federal Lands or Waters, National Parks, Wildlife Refuges, wilderness areas, Bureau of Land Management and US Forest Service Lands.

### **Summary of Statewide Salmon Harvests**

In all salmon species on a statewide basis, sockeye, coho, pink and chum, except Chinook, there was a noticeable and dramatic increase in commercial harvests that occurred as MSA was passed and implemented in 1979. Alaska Statehood and the assumption of salmon management in 1959 appear to be unrelated to increased harvests of sockeye, coho, pink and chum salmon. The passage of the 2000 SSP appears to be unrelated to statewide harvests.

In summary, none of this species, by area analysis, was considered by the NPFMC and certainly was not a part of the Environmental Assessment. The economic losses associated with the decline in Chinook, sockeye, coho, chum, and pink harvests are in the hundreds of millions of dollars over the past half century. This type of economic analysis was glossed over by the rush to revise the Salmon Fisheries Management Plan with Amendment 12.

Sincerely,

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Roland Maw  
UCIDA Executive Director

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Jeff Fox  
Retired Cook Inlet Area Biologist