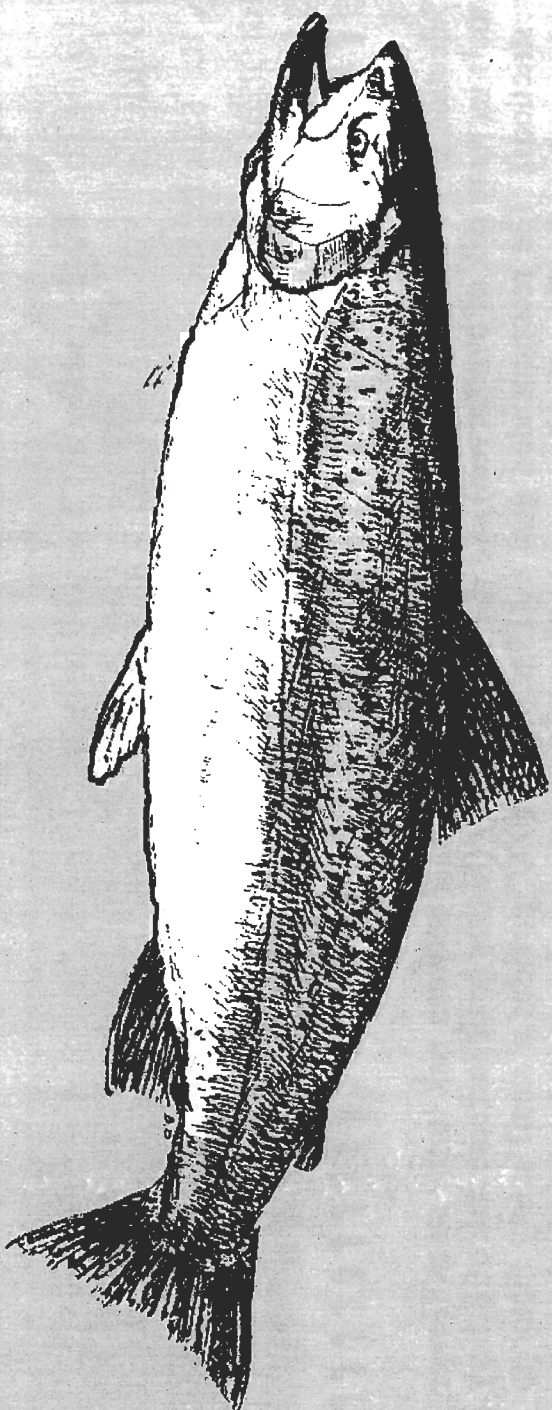


DEFENDING 12,000



UNDERSTANDING ADF&G DATA

On Page 16 of the Escapement Goal Report, the recommended goal of 15,000 to 30,000 provides a "small safety factor" to reduce risk to the Chinook salmon stock. Without the "safety factor" the NEW SEG would be 12,000-28,000. (3,000 Chinook "safety factor")



Selection of an escapement goal always involves a tradeoff between risk to the stock (lower goals increase risk of overharvest) and risk to the fishery (higher goals increase risk of fishery restrictions). The recommended goal of 15,000 to 30,000 provides a small safety factor to reduce risk to the Chinook salmon stock. That is, the goal range is not centered with respect to maximum yield probabilities (Figure 8), nor with respect to expected sustained yields (Figure 9), being slightly higher than what would be required to symmetrically bracket these measures of yield performance. Along with the uncertainties discussed above, the primary reason for slightly elevating the recommended goal is that we have not yet experienced returns from escapements below 20,000 (Figure 12). The lowest escapement from which the return is complete was 23,830 (90% CI: 17,630-31,170) in 1997, which produced 59,000-88,370 (90% CI) returning adults (Table 4). Returns from the small 2009 escapement (22,320; 17,110-28,990) will commence as age-4 fish in 2013, and from the smaller 2010 escapement (16,320; 12,730-20,590) as age-4 fish in 2014 (Table 4).

This is a Yield Discussion

There is very little trade-off of yield between 22,000 escapement and 12,000. This is not a biological risk.

DRAFT

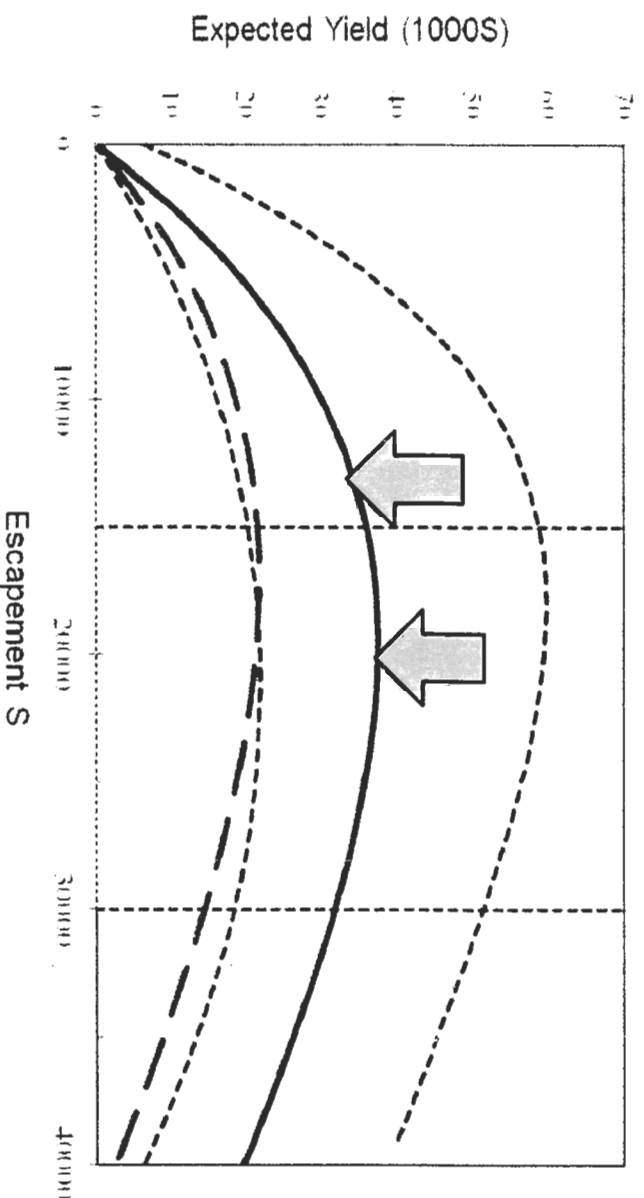


Figure 9.-Expected sustained yield (solid black line), and 80% interval (short dashed black lines) as a function of spawning escapement for late-run Kenai River Chinook salmon, assuming average productivity for brood years 1979–2008. Vertical lines bracket recommended escapement goal range. Expected sustained yield under recent, reduced productivity (brood years 2004–2008) is also shown (long dashed red lines).

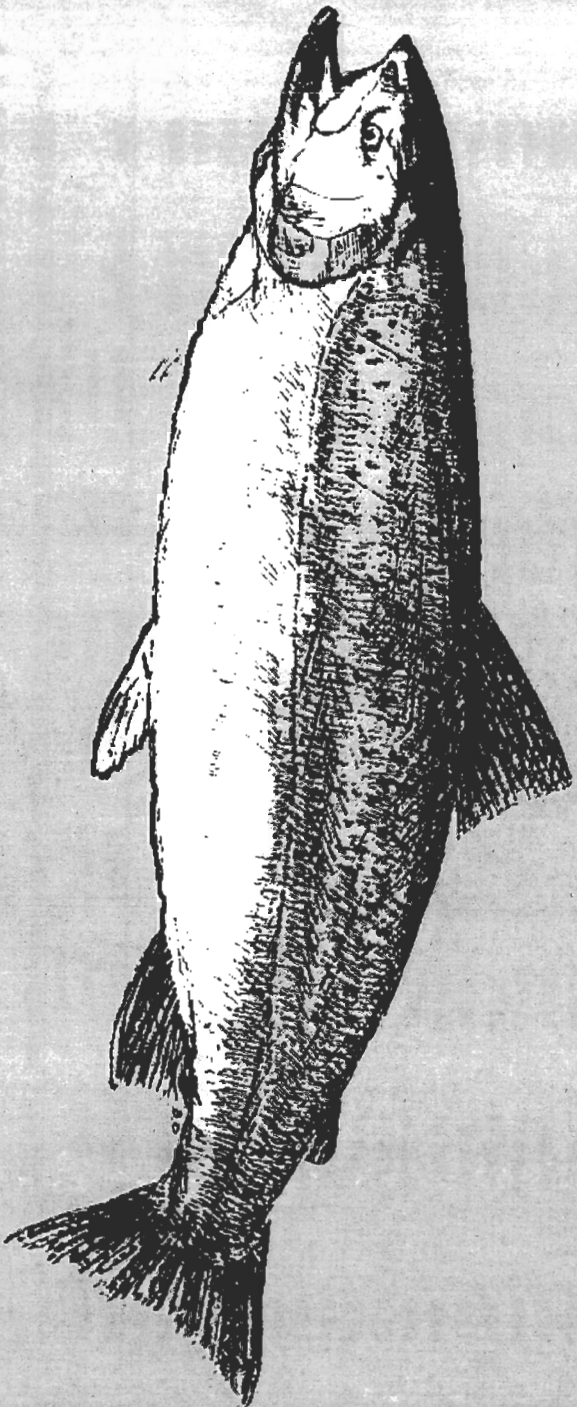
This is a YIELD discussion

Escapement S	Return R	Sustained Yield SY
2000	10,720	8,480
4000	20,070	15,630
6000	28,070	21,560
8000	34,920	26,400
10000	40,890	30,220
12000	45,820	33,180
14000	49,940	35,320
16000	53,150	36,750
18000	55,790	37,470
20000	57,820	37,630
22000	59,240	37,260
24000	60,280	36,400
26000	60,930	35,190
28000	61,370	33,610
30000	61,210	31,760
32000	61,030	29,690
34000	60,600	27,380
36000	59,980	24,920
38000	59,220	22,290
40000	58,380	19,540
42000	57,490	16,690
44000	56,450	13,710
46000	55,210	10,650
48000	53,970	7,492
50000	52,660	4,236

- **12,000** Escapement will produce a Return of 45,820 X 39% (Exp rate) = 17,869 (Harvest)
45,820(Return) - 17,869 (Harvest) = 27,951 (Escapement)
27,951-12,000 =15,951 will not be harvested *Why?*
- **22,000** Escapement will produce a Return of 59,240 x 39% (Exp rate) = 23,100 (Harvest)
59,240(Run) - 23,100(Harvest) = 36,140 (Escapement)
36,140-22,000 =14,140 will not be harvested *Why?*
- **12,000** Escapement produces 33,180 Sustained Yield
22,000 Escapement produces 37,260 Sustained Yield
Difference in Sustained Yield of 4,080 Chinook that will not be harvested due to an exploitation rate of 39%.

Why? There are limitations on **ALL** user groups which keeps the average exploitation rate at 39%. In order to increase exploitation rates to harvest excess fish, there would need to be an increase in bag limits, seasons and fisheries participation.

HARVEST RATES



HARVEST RATES FOR ALL USER GROUPS

Kernai River late-run Chinook salmon total run, harvest by user group, and estimated exploitation rate, 1986-2012.

Year	Total Run	Deep Creek		ESSN	Kernai	Drift		Pers	Use	Fid.	Winter		Total	Exploitation
		Marine	Harvest			Gillnet	Harvest				Sport	Harvest		
1986	77,850		630		13,619		1,834				10,188		26,271	0.34
1987	81,300		1,218		14,536		4,561				13,223		33,539	0.41
1988	72,990		1,487		8,834		2,237				19,871		32,429	0.44
1989	44,020		1,368		7,498		0			22	9,779		18,668	0.42
1990	37,370		1,605		2,843		621		91	13	6,966		12,139	0.32
1991	42,820		1,705		3,161		246		130	288	7,919		13,649	0.32
1992	51,760		2,115		7,363		615		50	402	7,790		18,335	0.35
1993	63,420		2,834		9,672		765		129	27	18,253		31,680	0.50
1994	60,060		1,869		10,700		464		13	392	18,409		31,847	0.53
1995	54,450		2,069		8,291		594		36	646	13,081		24,717	0.45
1996	48,020		2,038		7,944		389		45	294	8,449		19,160	0.40
1997	48,960		2,931		7,780		627		339	26	13,325		25,028	0.51
1998	50,660		1,784		3,495		335		271	2	8,110		13,997	0.28
1999	52,520		1,004		6,501		575		488	4	14,277		22,849	0.44
2000	50,680		1,052		2,531		270		410	6	15,721		19,990	0.39
2001	60,780		920		4,128		619		638	8	17,305		23,618	0.39
2002	66,420		427		6,511		415		606	6	13,272		21,237	0.32
2003	98,870		200		10,174		1,240		1,016	11	18,746		31,388	0.32
2004	101,200		1,660		14,897		1,104		792	10	18,393		36,856	0.36
2005	96,880		1,040		15,183		1,958		775	11	19,481		38,449	0.40
2006	74,450		938		6,840		2,782		1,034	11	16,642		28,247	0.38
2007	58,360		797		8,445		912		1,509	6	12,111		23,780	0.41
2008	52,180		517		5,203		653		1,362	15	11,508		19,258	0.37
2009	38,190		256		3,839		859		1,189	4	9,662		15,809	0.41
2010	30,510		558		4,567		539		865	21	7,471		14,021	0.46
2011	36,650		880		5,596		593		1,243	5	7,831		16,148	0.44
2012	29,370		50		484		191		0	0	198		923	0.03
Mean	58,546		1,257		7,438		963		567	93	12,518		22,742	0.39

Average 1986-2011

2.1%

12.8%

1.5%

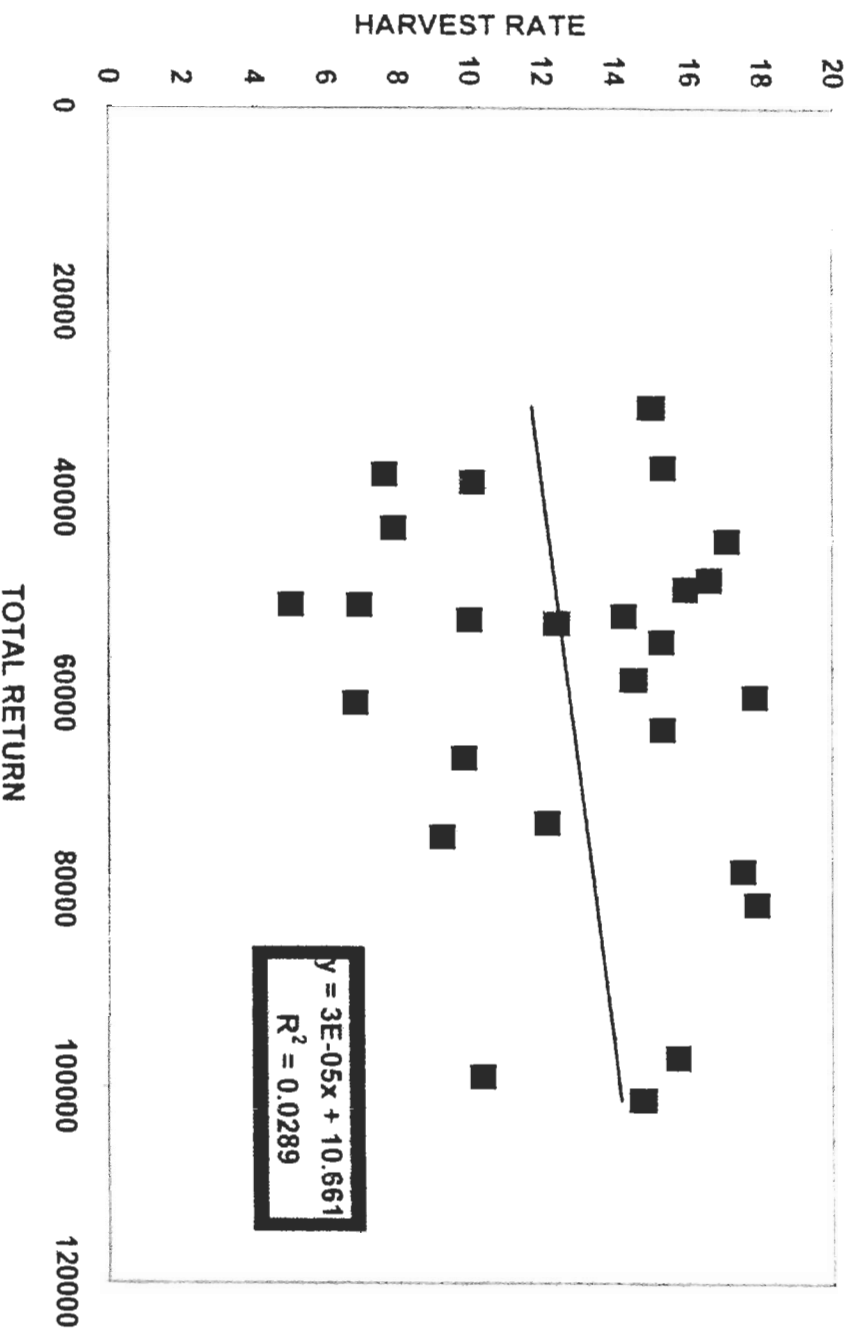
0.8%

21.8%

39%

HARVEST RATES FOR ESSN FISHERY

ESSN HARVEST RATE FOR LATE RUN KENAI RIVER CHINOOK SALMON



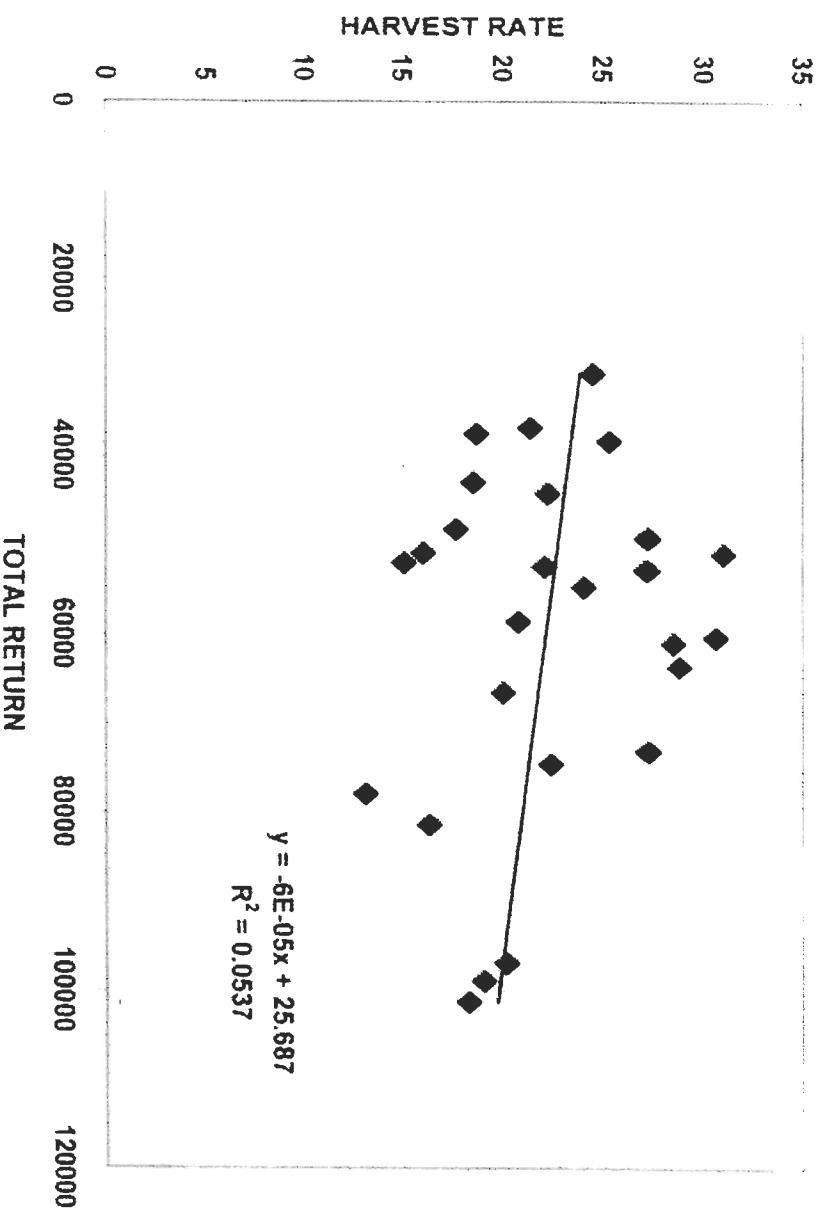
ESSN harvest rate is fairly constant.

You can see here over the years it ranges from 5% to 18% with an average of 13% regardless of total return.

ESSN do not harvest at higher rates on lower runs.

HARVEST RATES FOR IN RIVER SPORT FISHERY

HARVEST RATE FOR INRIVER SPORT FISHERIES LATE RUN KENAI RIVER CHINOOK

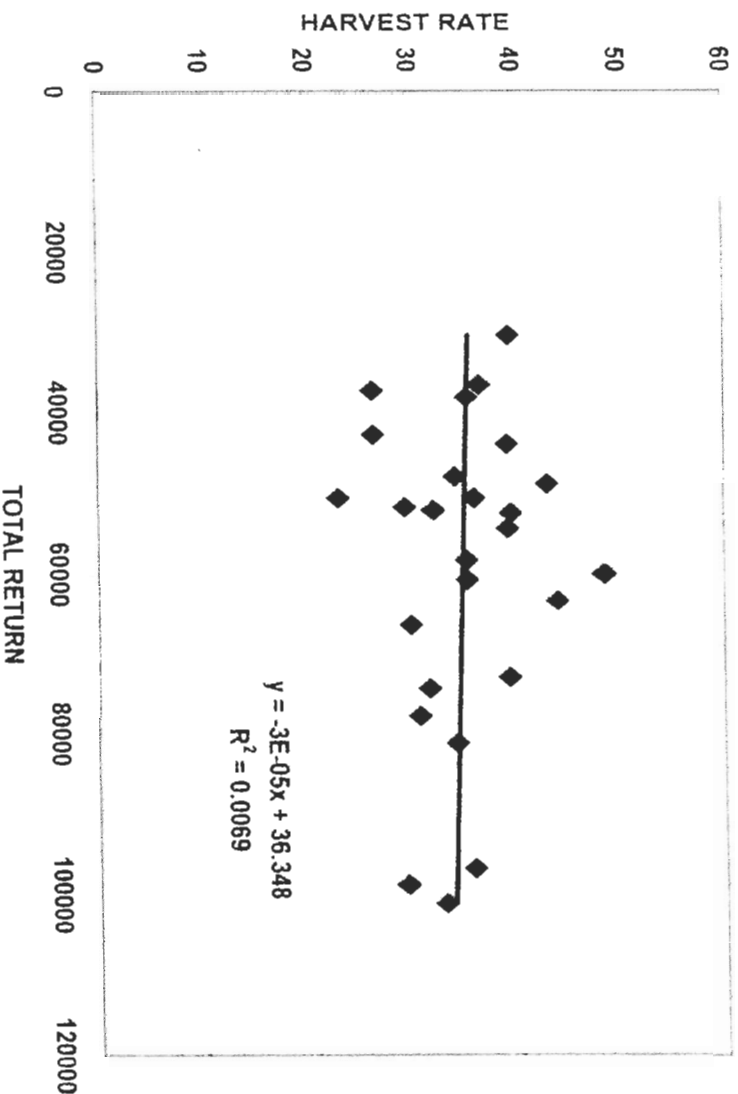


In river sport harvest rate is also fairly constant.

You can see over the years it ranges from 13% to 31% with an average of 22%

HARVEST RATES FOR ESSN & INRIVER SPORT FISHERY

TOTAL HARVEST RATE ESSN AND INRIVER SPORT FISHERY LATE RUN KENAI RIVER
CHINOOK SALMON



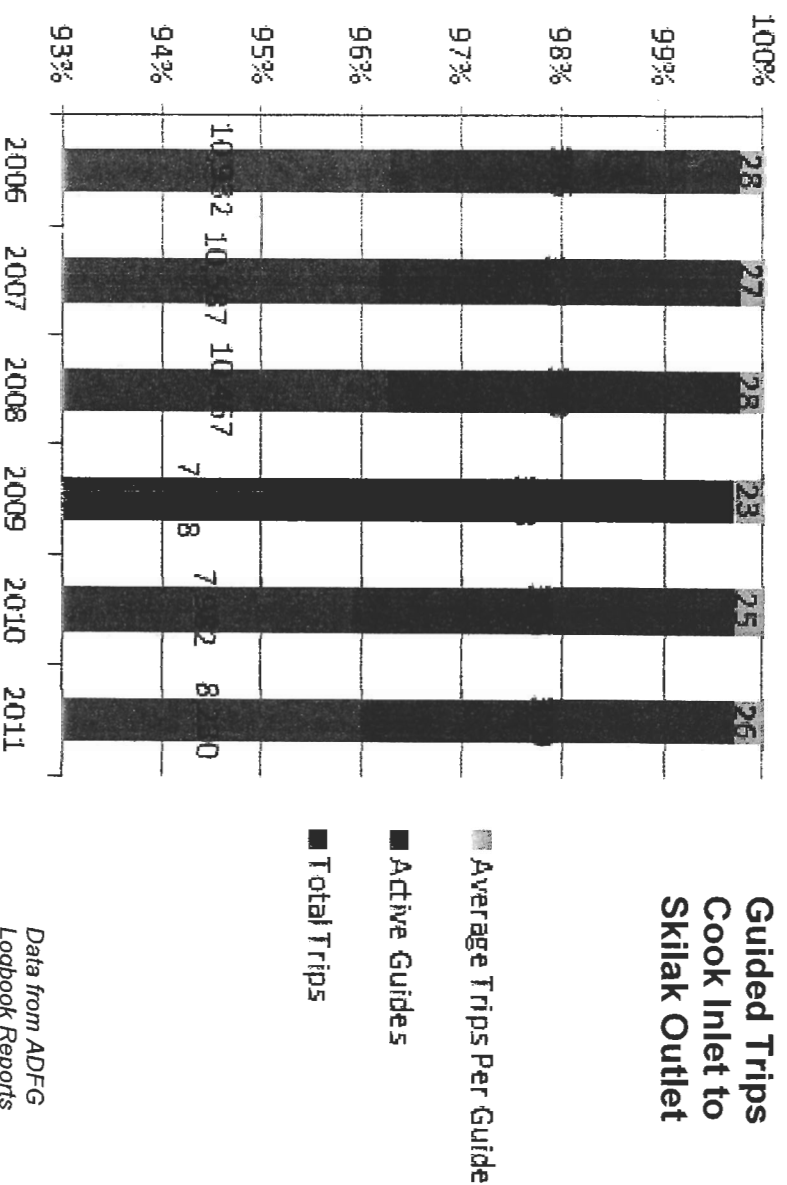
ESSN and In River Sport fisheries harvest at an average harvest rate of 35% and is constant across all total returns measured.

(39% with ALL user groups fishing)

*** A total return of 20,000 Chinook with ALL fisheries fishing regularly will produce a spawning escapement of 12,200. ***

Guided Trips On The Kenai River

2005-2011 Active Guide Data on the Kenai River



Average Trips per Guide does not decrease when chinook restrictions are in place.

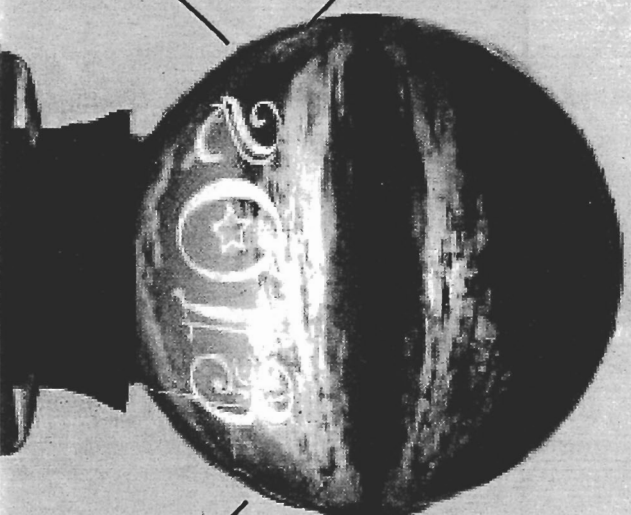
Looking Ahead

Will we have a better *crystal ball* in 2013?

In 2012 ADF&G projected 14,000 but what really showed up in 2012 was **29,000**. That is **100% error** at a critical time in our fisheries. In 2012 with 29,000 total run **ALL** fisheries could have fished normally with a 39% harvest rate and we would have had a 17,690 spawning escapement.

New Sonar
Location

New
Escapement
Goal



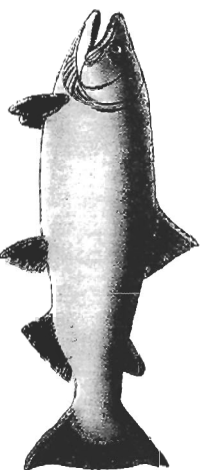
New Task Force
Recommendations

New Run
Timing Model

SALMON ARE RESILIENT

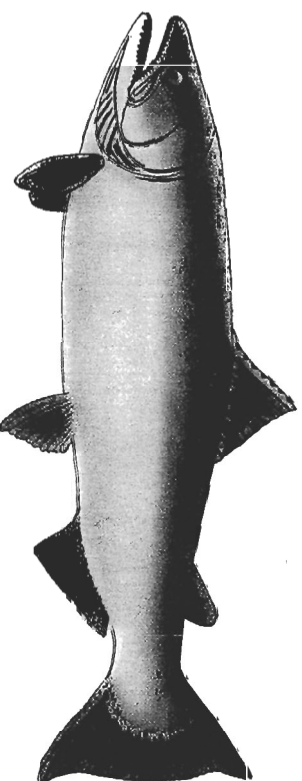
Total Return is made up of 3,4,5,6 year old fish

2011



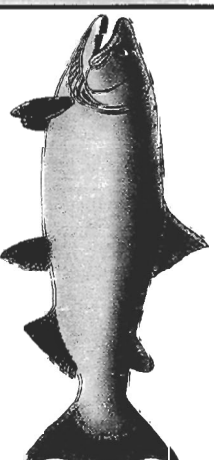
Spawning escapement of
20,290

2012



Spawning escapement of
28,440

2013



Spawning escapement of
17,690

2012 was a GREAT BUFFER for 2013