Susitna River Sockeye salmon Data Request from board member Israel Payton (12/17/2019)

Please provide the following-

1. 2005 to current year, Susitna River Drainage Sockeye (lakes + rivers) genetic commercial proportion of harvest by user groups in relation to run size (harvest rate by users and total harvest rate). User groups- Drift, ESSN, Northern District, Other, PU/ Ed, Sport, and Subsistence. Per year.

See Table 1

Notes:

Estimates could not be provided for 2005 because a drainage-wide estimate of escapement was not available for 2005.

Estimates could not be provided for 2019 because a drainage-wide estimate of harvest was not yet available.

2. Provide proportion of harvest by user groups in relation to total harvest. Per year.

See Table 2

3. 2005-2008 mean, a 2009 to 2018 mean. and a 2005-2018 mean for the above data.

See Tables 1 and 2

Note: follow up discussion with Mr. Payton (01/29/2020) modified the request to identify pre-SOC status (2005–2007) from SOC status (2008–2019)

4. For each year overlay what the escapement goal was for that year, Yentna river sonar for some years and later years JCL lakes, and if it was made or not. (performance in relation to goals)

See Table 3

5. For each year overlay what the projected performance of the Kenai run was vs. actual performance (did we change projection in season) . Example- what tier was Kenai managed for- less than 2.3 , 2.3 to 4.6 or greater than 4.6

Difficulties in accurately forecasting the run and starting in the appropriate tier can influence the department's ability to achieve inriver and escapement goals.

See Table 4

6. Best available estimate of return per spawner for Susitna River Sockeye. Format for the years in request # 3 if possible.

See Table 5

Table 1.–Estimated annual harvest and percent of annual total run of Susitna River sockeye salmon based on genetic stock identification in Upper Cook Inlet fisheries, 2006-2018.

			Central District (drift gillnet)		Kasilof River Special Harvest Area (set and drift gillnet)		Northern District (set gillnet)		Upper Subdistrict (Eastside set gillnet)		Western-Kalgin Island-Kustatan-Chinitna Bay-Subdistricts (set gillnet)		Sport fish		Upper Yentna Subsistence		Estimated total	
Year	Estimated total run	Estimated escapement	harvest	%	harvest	%	harvest	%	harvest	%	harvest	%	harvest	%	harvest	%	harvest	%
2006	470,864	415,791	43,084	9.1	395	0.1	2,751	0.6	2,281	0.5	4,156	0.9	2,038	0.4	368	0.1	55,073	11.7
2007	579,284	322,718	192,602	33.2	12	0.0	3,880	0.7	51,954	9.0	3,104	0.5	4,647	0.8	367	0.1	256,566	44.3
2008	450,868	299,736	106,540	23.6	24	0.0	6,802	1.5	32,144	7.1	910	0.2	4,403	1.0	310	0.1	151,132	33.5
2009	320,837	207,409	85,416	26.6	-	0.0	7,033	2.2	10,811	3.4	233	0.1	9,682	3.0	253	0.1	113,428	35.4
2010	307,795	184,472	95,624	31.1	-	0.0	6,243	2.0	14,307	4.6	1,059	0.3	5,449	1.8	642	0.2	123,323	40.1
2011	542,343	307,681	192,382	35.5	-	0.0	11,901	2.2	21,800	4.0	2,109	0.4	5,872	1.1	598	0.1	234,663	43.3
2012	325,902	135,948	172,341	52.9	-	0.0	4,780	1.5	6,352	1.9	807	0.2	5,395	1.7	279	0.1	189,954	58.3
2013	418,085	219,130	128,750	30.8	38	0.0	5,269	1.3	55,007	13.2	370	0.1	9,360	2.2	160	0.0	198,955	47.6
2014	293,930	161,770	108,139	36.8	121	0.0	11,705	4.0	2,280	0.8	3,503	1.2	6,084	2.1	328	0.1	132,159	45.0
2015	576,298	367,871	117,856	20.5	75	0.0	21,715	3.8	60,829	10.6	1,963	0.3	5,411	0.9	578	0.1	208,427	36.2
2016	430,817	293,401	99,045	23.0	-	0.0	16,390	3.8	5,737	1.3	5,278	1.2	10,451	2.4	514	0.1	137,416	31.9
2017	396,482	200,850	110,132	27.8	-	0.0	10,773	2.7	66,903	16.9	2,277	0.6	5,092	1.3	454	0.1	195,632	49.3
2018	272,714	161,027	72,086	26.4	271	0.1	15,383	5.6	14,392	5.3	2,359	0.9	6,790	2.5	405	0.1	111,687	41.0
Averages																		
2006-2007	525,074	369,255	117,843	21.2	204	0.0	3,316	0.6	27,117	4.7	3,630	0.7	3,343	0.6	368	0.1	155,820	28.0
2008-2018	394,188	230,845	117,119	30.4	48	0.0	10,727	2.8	26,415	6.3	1,897	0.5	6,726	1.8	411	0.1	163,343	41.9
2006-2018	414,325	252,139	117,231	29.0	72	0.0	9,587	2.4	26,523	6.0	2,164	0.5	6,206	1.6	404	0.1	162,186	39.8

Note: "-" indicates years Kasilof River Special Harvest area was not fished.

Table 2.–Estimated annual harvest and percent of annual harvest of Susitna River sockeye salmon based on genetic stock identification in Upper Cook Inlet fisheries, 2005-2019.

	Central District (drift gillnet)		Kasilof River Special Harvest Area (set and drift gillnet)		Northern District (set gillnet)		Upper Subdistrict (Eastside set gillnet)		Western-Kalgin Island-Kustatan-Chinitna Bay Subdistricts (set gillnet)		Sport fish		Upper Yentna Subsistence		Estimated total
Year	harvest	percent	harvest	percent	harvest	percent	harvest	percent	harvest	percent	harvest	percent	harvest	percent	harvest
2005	101,163	79.2%	56	0.0%	7,299	5.7%	12,656	9.9%	2,534	2.0%	3,896	3.0%	177	0.1%	127,780
2006	43,084	78.2%	395	0.7%	2,751	5.0%	2,281	4.1%	4,156	7.5%	2,038	3.7%	368	0.7%	55,073
2007	192,602	75.1%	12	0.0%	3,880	1.5%	51,954	20.2%	3,104	1.2%	4,647	1.8%	367	0.1%	256,566
2008	106,540	70.5%	24	0.0%	6,802	4.5%	32,144	21.3%	910	0.6%	4,403	2.9%	310	0.2%	151,132
2009	85,416	75.3%	-	0.0%	7,033	6.2%	10,811	9.5%	233	0.2%	9,682	8.5%	253	0.2%	113,428
2010	95,624	77.5%	-	0.0%	6,243	5.1%	14,307	11.6%	1,059	0.9%	5,449	4.4%	642	0.5%	123,323
2011	192,382	82.0%	-	0.0%	11,901	5.1%	21,800	9.3%	2,109	0.9%	5,872	2.5%	598	0.3%	234,663
2012	172,341	90.7%	-	0.0%	4,780	2.5%	6,352	3.3%	807	0.4%	5,395	2.8%	279	0.1%	189,954
2013	128,750	64.7%	38	0.0%	5,269	2.6%	55,007	27.6%	370	0.2%	9,360	4.7%	160	0.1%	198,955
2014	108,139	81.8%	121	0.1%	11,705	8.9%	2,280	1.7%	3,503	2.7%	6,084	4.6%	328	0.2%	132,159
2015	117,856	56.5%	75	0.0%	21,715	10.4%	60,829	29.2%	1,963	0.9%	5,411	2.6%	578	0.3%	208,427
2016	99,045	72.1%	-	0.0%	16,390	11.9%	5,737	4.2%	5,278	3.8%	10,451	7.6%	514	0.4%	137,416
2017	110,132	56.3%	-	0.0%	10,773	5.5%	66,903	34.2%	2,277	1.2%	5,092	2.6%	454	0.2%	195,632
2018	72,086	64.5%	271	0.2%	15,383	13.8%	14,392	12.9%	2,359	2.1%	6,790	6.1%	405	0.4%	111,687
2019	54,304	NA	-	NA	14,605	NA	5,724	NA	1,828	NA	NA	NA	476	NA	NA
Averages															
2005-2007	112,283	77.5%	154	0.3%	4,643	4.1%	22,297	11.4%	3,265	3.6%	3,527	2.9%	304	0.3%	146,473
2008-2018	117,119	72.0%	48	0.0%	10,727	7.0%	26,415	15.0%	1,897	1.3%	6,726	4.5%	411	0.3%	163,343
2005-2018	116,083	73.2%	71	0.1%	9,423	6.3%	25,532	14.2%	2,190	1.8%	6,041	4.1%	388	0.3%	159,728

Sources: *Barclay, A. W. 2020. Genetic stock identification of Upper Cook Inlet sockeye salmon harvest, 2019. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 5J20-01, Anchorage.*

Oslund, S., S. Ivey, and D. Lescanec. 2020. Area Management Report for the sport fisheries of northern Cook Inlet, 2017–2018. Alaska Department of Fish and Game, Fishery Management Report No. 20-04, Anchorage.

NA - 2019 estimates not available.

"-" indicates years Kasilof River Special Harvest area was not fished.

Table 3.–Susitna River sockeye salmon escapement goals and escapements, 2005–2019.

	Yentna River[a]		Chelatna Lake		Judd Lake		Larson Lake	
Year	SEG	Escapement*	SEG	Escapement**	SEG	Escapement**	SEG	Escapement**
2005	90,000-160,000	36,921	no goal	no assessment	no goal	no assessment	no goal	9,955
2006	90,000-160,000	92,051	no goal	18,433	no goal	40,633	no goal	57,411
2007	90,000-160,000	79,901	no goal	41,290	no goal	57,392	no goal	47,924
2008	90,000-160,000	90,146	no goal	74,469	no goal	53,681	no goal	34,595
2009	no goal	no assessment	20,000-65,000	17,721	25,000-55,000	44,602	15,000-50,000	40,930
2010	no goal	no assessment	20,000-65,000	37,734	25,000-55,000	18,466	15,000-50,000	20,324
2011	no goal	no assessment	20,000-65,000	70,353	25,000-55,000	39,909	15,000-50,000	12,225
2012	no goal	no assessment	20,000-65,000	37,736	25,000-55,000	18,715	15,000-50,000	16,557
2013	no goal	no assessment	20,000-65,000	70,555	25,000-55,000	14,088	15,000-50,000	21,821
2014	no goal	no assessment	20,000-65,000	26,374	25,000-55,000	22,229	15,000-50,000	12,430
2015	no goal	no assessment	20,000-65,000	69,897	25,000-55,000	47,934	15,000-50,000	23,185
2016	no goal	no assessment	20,000-65,000	70,725	25,000-55,000	no assessment	15,000-50,000	14,333
2017	no goal	no assessment	20,000-45,000	26,986	15,000-40,000	35,731	15,000-35,000	31,866
2018	no goal	no assessment	20,000-45,000	21,414	15,000-40,000	30,844	15,000-35,000	23,632
2019	no goal	no assessment	20,000-45,000	26,303	15,000-40,000	44,145	15,000-35,000	9,699

Notes: Escapements shaded in grey were below the escapement goal in place that year for that stock.
'a' In 2005, the BOF adopted an optimal escapement goal of 75,000-180,000 Yentna River sockeye salmon, contingent on a run to the Kenai River greater than 4 million
"*"Bendix counts.
"**"Weir counts.
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Sources:

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.
McKinley, T., N. DeCovich, J. W. Erickson, T. Hamazaki, R. Begich, and T. L. Vincent. 2020. Review of salmon escapement goals in Upper Cook Inlet, Alaska, 2019. Alaska Department of Fish and Game, Fishery Manuscript No. 20-02, Anchorage.
Oslund, S., S. Ivey, and D. Lescanec. 2020. Area Management Report for the sport fisheries of northern Cook Inlet, 2017–2018. Alaska Department of Fish and Game, Fishery Management Report No. 20-04, Anchorage.

Table 4.–History of Kenai River sockeye salmon estimates of sonar passage, sport harvest above the sonar, escapement, and preseason run size forecast versus actual run size.

Year	Sonar Count	Sport Harvest Above Sonar	Escapement	Inriver Goal	Optimal Escapement Goal	Escapement Goal	Preseason Forecast (millions)	Actual Run Size (millions)	Inseason Assessment Action [a]
1987	1,596,871	233,958	1,362,913	400,000-700,000	no OEG	330,000-600,000	3.5	8.6	
1988	1,021,469	144,093	877,376	400,000-700,000	no OEG	330,000-600,000	5	5.8	
1989	1,599,959	268,958	1,331,001	400,000-700,000	no OEG	330,000-600,000		5.9	
1990	659,520	155,742	503,778	400,000-700,000	no OEG	330,000-600,000	4.7	2.7	
1991	647,597	227,697	419,900	400,000-700,000	no OEG	330,000-600,000		1.7	
1992	994,798	222,482	772,316	400,000-700,000	no OEG	330,000-600,000	4.2	7.7	
1993	813,617	137,229	676,388	400,000-700,000	no OEG	330,000-600,000	1.9	3.9	
1994	1,003,446	102,378	901,068	400,000-700,000	no OEG	330,000-600,000	1.5	3.4	
1995	630,447	108,076	522,371	450,000-700,000	no OEG	330,000-600,000	2.3	2.3	
1996	797,847	166,166	631,681	550,000-800,000	no OEG	330,000-600,000	2.5	3.2	
1997	1,064,818	147,057	917,761	550,000-825,000	no OEG	330,000-600,000	4	3.9	
1998	767,558	155,905	611,653	550,000-850,000	no OEG	330,000-600,000	1.7	1.5	
1999	803,379	187,725	615,654	750,000-950,000	500,000-1,000,000	500,000-800,000	1.6	2.5	Increase
2000	624,578	203,801	420,777	600,000-850,000	500,000-1,000,000	500,000-800,000	2.5	1.4	Reduce
2001	650,036	168,104	481,932	600,000-850,000	500,000-1,000,000	500,000-800,000	2.4	1.8	Reduce
2002	957,924	213,066	744,858	750,000-950,000	500,000-1,000,000	500,000-800,000	1.7	3.0	Increase
2003	1,181,309	253,734	927,575	750,000-950,000	500,000-1,000,000	500,000-800,000	2	3.8	Increase
2004	1,385,981	254,836	1,131,145	850,000-1,100,000	500,000-1,000,000	500,000-800,000	3.2	5.0	Increase
2005	1,376,452	254,818	1,121,634	850,000-1,100,000	500,000-1,000,000	500,000-800,000	3.3	5.6	Increase
2006	1,499,692	172,638	1,327,054	750,000-950,000	500,000-1,000,000	500,000-800,000	1.8	2.5	Increase
2007	867,572	265,702	601,870	750,000-950,000	500,000-1,000,000	500,000-800,000	2.4	3.4	Status Quo
2008	614,946	208,334	406,612	650,000-850,000	500,000-1,000,000	500,000-800,000	3.1	2.3	Reduce
2009	745,170	241,938	503,232	650,000-850,000	500,000-1,000,000	500,000-800,000	2.4	2.4	Reduce
2010	970,662	256,582	714,080	750,000-950,000	500,000-1,000,000	500,000-800,000	1.7	3.3	Increase
2011	1,599,217	318,484	1,280,733	1,100,000-1,350,000	700,000-1,400,000	700,000-1,200,000	3.9	6.2	Increase
2012	1,581,555	368,720	1,212,835	1,100,000-1,350,000	700,000-1,400,000	700,000-1,200,000	4	4.7	Increase
2013	1,359,893	379,685	980,208	1,000,000-1,200,000	700,000-1,400,000	700,000-1,200,000	4.4	3.5	Status Quo
2014	1,520,340	301,998	1,218,341	1,000,000-1,200,000	700,000-1,400,000	700,000-1,200,000	3.8	3.3	Status Quo
2015	1,709,051	309,004	1,400,047	1,000,000-1,200,000	700,000-1,400,000	700,000-1,200,000	3.6	3.9	Status Quo
2016	1,383,692	262,981	1,120,711	1,100,000-1,350,000	700,000-1,400,000	700,000-1,200,000	4.7	3.5	Status Quo
2017	1,308,498	235,208	1,073,290	1,000,000-1,300,000	no OEG	700,000-1,200,000	2.2	2.9	Increase
2018	1,035,761	147,493	888,268	900,000-1,100,000	no OEG	700,000-1,200,000	2.5	1.6	Reduce
2019	1,849,054			1,000,000-1,300,000	no OEG	700,000-1,200,000	3.8	3.5	Status Quo

-continued-

Table 4.–Page 2 of 2.

Source: These data come from tables 88-1 and 96-1 in Staff Comments (RC2)

[a] Management tiers not implemented until 1999

Evaluation of Kenai River late-run sockeye salmon run-size tier based on the inseason assessment vs. preseason forecast.

Table 5.–Susitna River sockeye salmon brood table based on genetic stock composition estimates, 1999-2019.

Brood Year	Spawners	Adult Return														Total Return	Return per Spawner
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3		
1999														0	0		
2000											599	28,566	0	0	0		
2001							0	159,703	26,828	0	269	50,241	1,155	233	0		
2002				12,378	235,536	0	0	369,683	33,878	0	2,051	62,345	909	0	0		
2003		7,899	1,761	15,180	101,947	2,352	909	264,028	29,760	0	1,588	28,054	0	0	250	453,729	
2004		8,167	1,424	24,957	58,232	3,672	0	145,159	42,048	0	0	73,404	217	0	0	357,281	
2005		2,995	5,490	6,057	94,140	4,469	0	73,794	16,148	250	984	33,622	0	0	0	237,949	
2006	415,791	6,057	3,198	10,748	100,834	3,499	0	305,664	22,469	0	5,421	38,575	0	0	0	496,465	1.2
2007	322,718	31,493	3,249	91,856	66,304	21,595	0	135,077	40,625	721	839	30,395	0	0	0	422,154	1.3
2008	299,736	1,778	4,541	7,261	81,774	11,612	0	225,030	18,145	0	2,150	29,780	0	0	411	382,482	1.3
2009	207,409	5,072	5,421	10,195	98,083	15,700	0	101,069	38,641	0	411	53,081	411	0	0	328,084	1.6
2010	184,472	9,930	19,287	4,275	118,462	0	0	330,198	17,747	0	1,010	42,642	238	0	0	543,789	2.9
2011	307,681	5,000	965	26,997	142,061	7,493	0	216,803	25,903	327	1,107	52,491	0	280	0	479,428	1.6
2012	135,948	2,053	1,426	23,706	95,946	11,809	0	195,651	33,214	0	0	1,810	0	0	0	365,615	2.7
2013	219,130	15,787	6,382	2,737	119,687	0	0	99,723	32,544	226	0	7,524	0				
2014	161,770	548	563	0	143,870	455	0	142,329	1,442	0							
2015	367,871	0	664	176	114,615	0											
2016	293,401	0	1,029														
2017	200,850																
2018	161,027																
2019	180,240																
Averages																	
2006-2007	369,255	18,775	3,224	51,302	83,569	12,547	0	220,370	31,547	360	3,130	34,485	0	0	0	459,310	1.3
2008-2012	227,049	4,767	6,328	14,487	107,265	9,323	0	213,750	26,730	65	936	35,961	130	56	82	419,880	2.0
2006-2012	267,679	8,769	5,441	25,005	100,495	10,244	0	215,642	28,106	150	1,563	35,539	93	40	59	431,145	1.8

Using genetic estimates of stock-specific UCI CF harvests 2020.

Complete brood year returns with escapement estimates.