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Regional Information Report No. 5J08-01

Success in Achieving Salmon Escapement Goals in Monitored Systems—Prepared at the request of the House Fisheries Committee

Edited by

Geron Bruce

February 2008

Alaska Department of Fish and Game

Division of Commercial Fisheries



Symbols and Abbreviations

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Weights and measures (metric)	
centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm
Weights and measures (English)	
cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd
Time and temperature	
day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s
Physics and chemistry	
all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General	
Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)	
fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL
Mathematics, statistics	
all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$ etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

REGIONAL INFORMATION REPORT NO. 5J08-01

SUCCESS IN ACHIEVING SALMON ESCAPEMENT GOALS IN MONITORED SYSTEMS—PREPARED AT THE REQUEST OF THE HOUSE FISHERIES COMMITTEE

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Division of Commercial Fisheries
Juneau, AK

February 2008

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ABSTRACT

This report is a compilation of actual salmon escapement numbers compared to salmon escapement goals for years 2001 through 2007 for Chinook, sockeye, coho, pink and chum salmon. Statewide summaries and regional summaries are included.

Key words: escapement, escapement goals, Chinook, sockeye, coho, pink, chum, salmon, Region

STATEWIDE SUMMARY

Figure 1.–Statewide summary of salmon escapements compared to goals for the years 2001 to 2007.

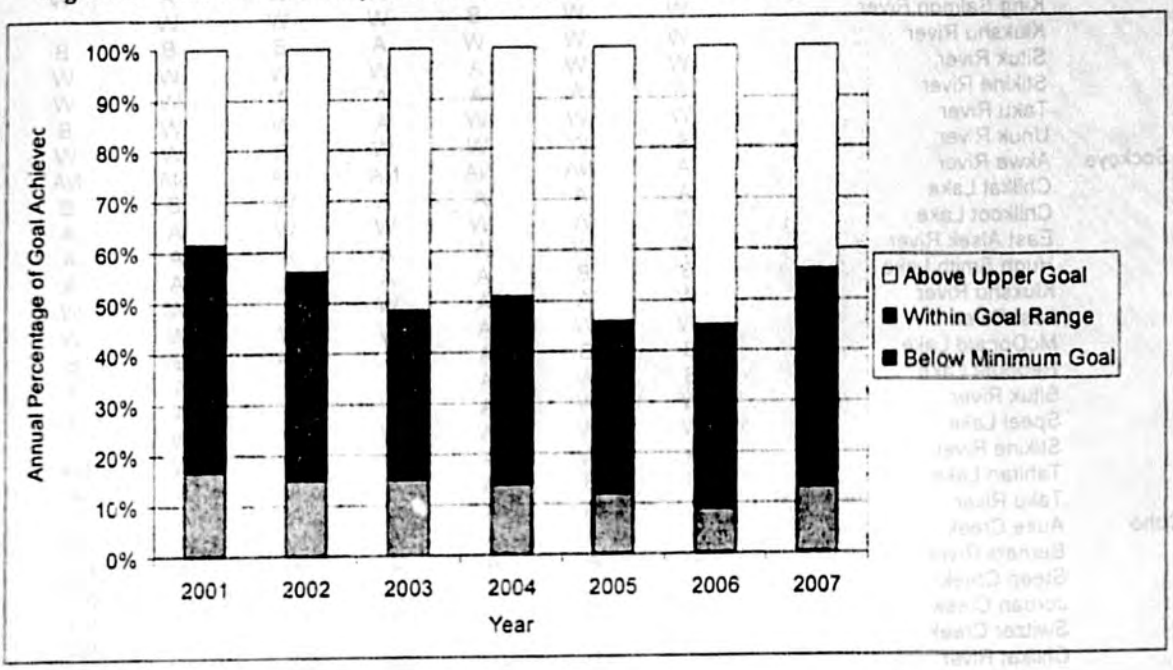


Table 1.–Statewide salmon escapements compared to goals for the years 2001 to 2007.

Statewide	2001	2002	2003	2004	2005	2006	2007
Total Stocks	296	298	298	301	269	250	238
Below Minimum Goal							
• Number	50	45	46	43	32	23	31
• Percent	17%	15%	15%	14%	12%	9%	13%
Within Goal Range							
• Number	132	123	99	110	92	89	102
• Percent	45%	41%	33%	37%	34%	36%	43%
Above Upper Goal							
• Number	114	130	153	148	145	138	105
• Percent	39%	44%	51%	49%	54%	55%	44%

REGIONAL SUMMARIES

REGION 1: SOUTHEAST REGION

Table 2.–List of rivers in the Southeast region that are above their upper escapement goal (A), within their escapement goal (W) or below their escapement goal (B). See Appendix A for comments.

Species	Stock	2001	2002	2003	2004	2005	2006	2007
Chinook	Andrew Creek	A	A	W	A	A	A	W
	Blossom River	B	B	B	W	W	W	B
	Chickamin River	A	A	A	W	A	A	W
	Chilkat River	A	A	A	W	W	W	B
	Keta River	W	W	W	W	W	A	W
	King Salmon River	W	W	B	W	W	W	
	Klukshu River	W	W	W	A	B	B	B
	Situk River	W	W	A	W	W	W	W
	Stikine River	A	A	A	A	A	W	W
	Taku River	W	W	W	A	W	W	B
	Unuk River	A	W	W	W	W	W	W
Sockeye	Akwe River	A	NA	NA	NA	NA	NA	NA
	Chilkat Lake	A	A	A	A	W	B	B
	Chilkoot Lake	W	W	W	W	W	A	A
	East Alsek River	W	W	A	A	A	A	A
	Hugh Smith Lake	B	B	A	A	A	A	A
	Klukshu River	W	A	A	W	B	W	W
	Lost River	W	W	A	W	W	W	W
	McDonald Lake	B	B	A	B	NA	B	B
	Redoubt Lake	B	W	A	A	A	A	A
	Situk River	W	W	A	W	W	A	A
	Speel Lake	W	W	W	W	W	W	W
	Stikine River	A	W	A	W	W	W	NA
	Tahltan Lake	B	B	A	A	A	A	A
	Taku River	A	A	A	A	A	A	A
Coho	Auke Creek	A	A	A	W	W	A	W
	Berners River	A	A	A	A	W	W	NA
	Steep Creek	A	A	A	B	W	NA	NA
	Jordan Creek	W	A	W	B	W	NA	NA
	Switzer Creek	W	A	A	W	W	NA	NA
	Chilkat River	NA	NA	NA	NA	NA	A	B
	Ford Arm Lake	W	A	A	A	A	A	A
	Hugh Smith Lake	A	A	A	W	A	W	A
	Ketchikan Survey Index Area	A	A	A	A	A	W	W
	Lost River	W	A	W	W	B	W	W
	Montana Creek	W	A	W	B	B	W	B
	Peterson Creek	W	W	W	A	W	A	W
	Sitka Survey Index Area	A	A	A	A	A	A	A
	Situk River	W	A	W	A	W	W	W
	Italio River	NA	NA	A	A	A	NA	NA
	Taku River	A	A	A	A	A	A	A
	Tsiu River	W	A	A	NA	W	W	W
Pink	NSE Inside	W	W	A	W	A	W	W
	NSE Outside	A	A	A	A	A	A	A
	SSE	A	A	A	A	A	W	A
	Situk River	W	W	A	A	A	W	A

Note: NA=Figure not available.

Figure 2.–Southeast region salmon escapements compared to goals for the years 2001 to 2007.

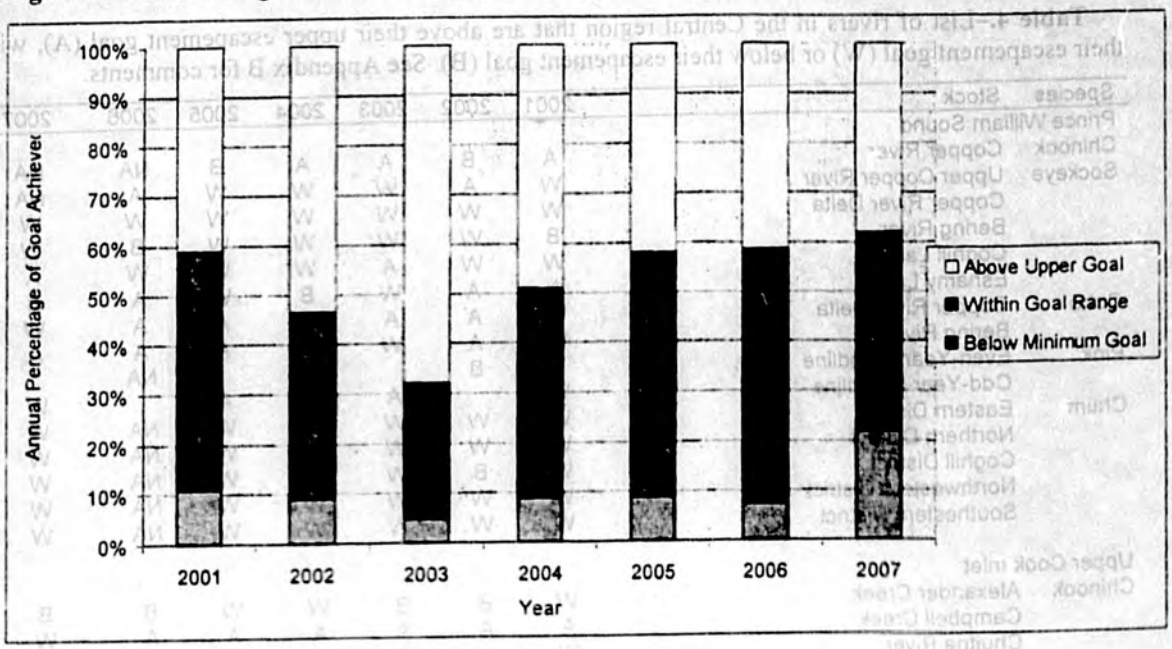


Table 3.–Southeast region salmon escapements compared to goals for the years 2001 to 2007.

Southeast Region	2001	2002	2003	2004	2005	2006	2007
Total Stocks	44	43	44	43	43	41	37
Below Minimum Goal							
• Number	5	4	2	4	4	3	8
• Percent	11%	9%	5%	9%	9%	7%	22%
Within Goal Range							
• Number	21	16	12	18	21	21	15
• Percent	48%	37%	27%	42%	49%	51%	40%
Above Upper Goal							
• Number	18	23	30	21	18	17	14
• Percent	41%	53%	68%	49%	42%	41%	38%

REGION 2: CENTRAL REGION

Table 4.–List of rivers in the Central region that are above their upper escapement goal (A), within their escapement goal (W) or below their escapement goal (B). See Appendix B for comments.

Species	Stock	2001	2002	2003	2004	2005	2006	2007
Prince William Sound								
Chinook	Copper River	A	B	A	A	B	NA	NA
Sockeye	Upper Copper River	W	A	W	W	W	A	NA
	Copper River Delta	W	W	W	W	W	W	W
	Bering River	B	W	W	W	W	B	W
	Coghill Lake	W	W	A	W	W	W	A
	Eshamy Lake	A	A	W	B	W	A	B
Coho	Copper River Delta	W	A	A	A	A	A	W
	Bering River	W	A	W	W	A	A	A
Pink	Even-Year Broodline		B		W		NA	
	Odd-Year Broodline	W		A		A		W
Chum	Eastern District	W	W	W	W	W	NA	W
	Northern District	W	W	W	W	W	NA	W
	Coghill District	W	B	W	W	W	NA	W
	Northwestern District	W	W	W	W	W	NA	W
	Southestern District	W	W	W	W	W	NA	W
Upper Cook Inlet								
Chinook	Alexander Creek	W	B	B	W	W	B	B
	Campbell Creek	A	A	A	A	A	A	W
	Chuitna River	W	W	W	A	W	W	B
	Chulitna River	W	A	NA	W	W	W	A
	Clear (Chunilna) Creek	W	A	NA	A	W	W	W
	Crooked Creek	W	W	A	A	A	W	W
	Deshka River	W	A	A	A	A	A	W
	Eagle River, South Fork	W	B	W	B	B	NA	W
	Goose Creek	MA	W	B	W	W	W	B
	Kenai River, Early Run	W	W	W	A	W	NA	A
	Kenai River, Late Run	W	W	W	A	W	NA	W
	Lake Creek	W	W	A	A	W	W	W
	Lewis River	W	W	A	A	W	W	B
	Little Susitna River	W	W	W	W	A	A	W
	Little Willow Creek	A	W	W	A	W	W	W
	Montana Creek	W	W	W	W	W	W	W
	Peters Creek	A	A	A	A	W	W	W
	Prairie Creek	W	W	W	W	W	W	W
	Sheep Creek	NA	W	NA	B	W	B	B
	Talachulitna River	W	A	A	A	W	A	W
	Theodore River	W	W	W	B	B	A	B
	Willow Creek	A	W	A	A	W	W	B
Sockeye	Crescent River	A	W	A	A	A	A	A
	Fish Creek (Knik)	W	A	A	W	B	A	W
	Kasilof River	A	W	A	A	A	A	A
	Kenai River	B	W	A	A	A	A	W
	Russian River, Early Run	A	A	W	A	A	A	W
	Russian River, Late Run	W	W	A	A	W	W	W
	Yentna River	B	B	A	B	B	W	B
Coho	Campbell Creek	W	A	B	A	A	A	NA
	Jim Creek	A	A	A	A	A	A	A
	Little Susitna River	A	A	W	A	A	NA	B
Pink	No stocks with an escapement goal							
Chum	Clearwater Creek	A	A	W	W	NA	NA	NA

-continued-

Table 4. Page 2 of 2.

Species	Stock	2001	2002	2003	2004	2005	2006	2007
Bristol Bay								
Chinook	Alagnak River	A	A	A	A	A	NA	NA
	Egegik River	B	A	A	A	B	NA	NA
	Naknek River	A	A	A	A	NA	NA	NA
Sockeye	Kvichak River	B	B	B	W	W	W	W
	Naknek River	W	W	W	W	A	W	A
	Egegik River	W	W	W	W	A	A	A
	Ugashik River	W	W	W	W	W	W	A
	Wood River	W	W	W	A	W	A	A
	Igushik River	A	B	W	W	A	A	A
	Nushagak River	A	B	W	W	A	W	W
	Togiak River	A	W	A	W	W	A	A
Lower Cook Inlet								
Chinook	Deep Creek	W	W	A	A	A	W	W
	Ninilchik River	W	W	B	W	W	W	W
	Anchor River	B	B	B	NA	NA	NA	NA
Sockeye	English Bay	W	A	A	A	W	A	A
	Delight Lake	W	A	W	W	A	W	A
	Desire Lake	B	A	B	W	B	A	W
	Bear Lake	A	A	A	W	A	A	A
	Aialik Lake	W	W	W	A	W	W	W
	Mikfik Lake	B	A	A	A	B	A	W
	Chenik Lake	B	W	A	A	A	A	A
	Amakdedori Creek	A	A	A	A	W	B	A
Pink	Humpy Creek	W	W	A	W	A	W	W
	China Poot Creek	W	W	W	W	A	W	W
	Tutka Creek	B	W	A	A	A	A	W
	Barabara Creek	W	W	W	W	A	W	A
	Seldovia Creek	B	W	W	A	A	A	A
	Port Graham River	W	A	W	A	A	A	A
	Port Chatham	W	W	A	A	A	A	W
	Windy Creek Right	W	A	A	A	A	A	A
	Windy Creek Left	A	W	A	W	A	A	W
	Rocky River	A	A	A	W	A	A	A
	Port Dick Creek	W	A	A	B	A	W	W
	Island Creek	A	A	A	A	A	A	A
	South Nuka Island Creek	A	A	A	W	W	W	W
	Desire Lake	A	A	A	A	A	A	W
	Bear Creek and Salmon Creek	B	B	B	B	A	W	NA
	Thumb Cove	W	W	W	W	W	W	NA
	Humpy Cove	B	W	W	W	A	A	NA
	Tonsina Creek	W	A	W	W	A	A	NA
	Bruin River	B	A	W	W	W	A	A
	Sunday Creek	W	A	A	A	A	A	A
	Brown's Peak Creek	A	A	A	W	A	A	A
Chum	Port Graham River	A	A	W	B	B	W	W
	Dogfish Lagoon	W	A	A	W	B	A	W
	Rocky River	W	A	A	A	A	A	W
	Port Dick Creek	B	A	A	A	A	W	W
	Island Creek	B	W	A	A	A	B	B
	Big Kamishak River	A	W	W	A	A	A	W
	Little Kamishak River	A	W	W	A	W	A	W
	McNeil River	W	B	W	B	W	A	B
	Bruin River	A	W	A	A	A	W	B
	Ursus Cove	A	A	A	A	A	A	A
	Cottonwood Creek	A	A	A	A	A	A	A
	Iniskin Bay	A	A	A	A	A	A	B

Note: NA=Figure not available.

Figure 3.–Central region salmon escapements compared to goals for the years 2001 to 2007.

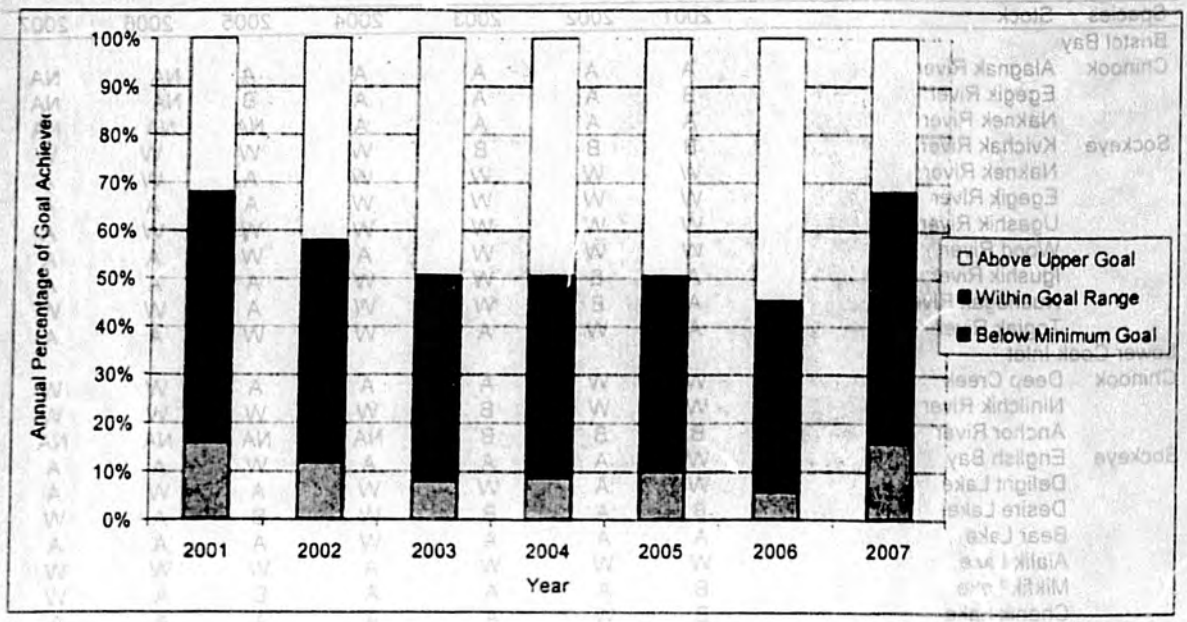


Table 5.–Central region salmon escapements compared to goals for the years 2001 to 2007.

Central Region	2001	2002	2003	2004	2005	2006	2007
Total Stocks	100	102	99	101	99	86	90
Below Minimum Goal							
• Number	16	12	8	9	10	5	14
• Percent	16%	12%	8%	9%	10%	6%	16%
Within Goal Range							
• Number	52	47	42	42	40	34	47
• Percent	52%	46%	42%	42%	40%	40%	52%
Above Upper Goal							
• Number	32	43	49	50	49	47	29
• Percent	32%	42%	49%	50%	49%	55%	32%

REGION 3: ARCTIC-YUKON-KUSKOKWIM REGION

Table 6.–List of rivers in the Arctic-Yukon-Kuskokwim region that are above their upper escapement goal (A), within their escapement goal (W) or below their escapement goal (B). See Appendix C for comments.

Species	Stock	2001	2002	2003	2004	2005	2006	2007
Norton Sound								
Chinook	Unalakleet River	W	W	W	B	B	NA	W
	Fish/Boston River aerial	A	NA	W	W	B	NS	NS
	Kwiniuk River tower	A	A	A	A	W	B	B
	Shaktoolik River aerial	A	B	B	B	NA	NA	W
	North River tower	A	W	W	B	B	B	W
	Unalakleet/Old Woman River aerial	A	NA	NA	B	B	NA	W
Sockeye	Salmon Lake/Grand Central aerial	W	B	A	A	A	A	A
	Glacial Lake aerial	W	B	W	W	A	A	W
	Pilgrim River weir							A
Coho	Kanektok River aerial	W	NA	NA	NA	NA	NA	NA
	M F Goodnews River weir	W	W	W	W	W	A	W
	Kogrukluk River Weir	W	W	A	W	W	W	W
Pink	Nome River weir	W	W	B	W	W	A	A
	Kwiniuk River tower	W	W	W	W	W	A	A
	Niukluk River tower	W	W	W	W	W	A	A
	North River tower	W	W	W	W	W	A	A
Chum	Subdistrict 1 Aggregate	B	W	B	W	A	A	A
	Sinuk River aerial	B	A	B	B	W	W	A
	Nome River weir	B	B	B	W	A	A	A
	Bonanza River aerial	W	W	B	B	A	B	A
	Snake River weir	W	A	W	W	A	A	A
	Solomon River aerial	W	A	B	W	A	A	A
	Flambeau River aerial	W	A	B	A	A	A	A
	Eldorado River weir	W	A	B	B	A	A	A
	Fish/Boston/Niukluk River aerial	W	NA	B	B	NA	NA	NA
	Niukluk River tower	W	W	W	B	B	B	A
	Kwiniuk River tower	W	A	W	B	W	A	A
	Tubutuluk River	W	NA	B	NA	B	NA	B
	Unalakleet/Old Woman River aerial	W	NA	NA	NA	NA	NA	B
Yukon								
Chinook	Chena River	A	A	A	A	NA	NA	W
	Salcha River	A	A	A	A	W	NA	W
	E F Andreafsky aerial	NA	B	NA	A	A	NA	W
	W F Andreafsky aerial	NA	B	W	A	W	W	A
	Anvik aerial	NA	W	NA	A	A	A	W
	Nulato aerial	NA	W	NA	A	B	W	A
	Gisasa aerial	A	B	NA	W	A	W	W
	Canada Mainstem	A	W	W	W	W	W	B
Coho	Delta Clearwater River boat/aerial	A	A	A	A	A	W	W
Chum	E F Andreafsky weir	B	B	B	B	B	W	W
	Anvik sonar	B	W	B	W	W	W	W
	Yukon River Drainage	B	A	A	W	A	A	A
	Tanana River	B	A	A	A	A	A	A
	Delta River	B	W	A	A	A	A	A
	Toklat River	B	B	B	W	NA	NA	NA
	Upper Yukon River Trib.	B	B	W	W	A	A	A
	Chandalar River	B	W	A	W	A	A	A
	Sheenjek River	B	B	B	B	A	A	W
	Fishing Branch River (Canada)	B	B	W	W	A	A	B
	Yukon River Mainstem (Canada)	B	W	W	W	A	A	A

-continued-

Table 6. Page 2 of 2.

Species	Stock	2001	2002	2003	2004	2005	2006	2007
Kuskokwim								
Chinook	Goodnews River aerial	NS	W	A	A	NS	A	NS
	M F Goodnews River weir	NS	W	W	W	A	A	A
	Kanektok River aerial	NS	NS	W	A	A	A	NS
	Kwethluk River weir	NS	W	A	A	NS	A	A
	Kisaralik aerial	NS	A	W	A	A	A	A
	Aniak aerial	NS	W	A	A	NS	A	A
	Salmon (Aniak) aerial	NS	A	A	A	A	NS	A
	Holitna aerial	NS	W	NS	A	A	A	NS
	Cheeneetnuk (Stony River) aerial	NS	W	W	W	W	W	NS
	Gagaryah (Stony River) aerial	NS	W	A	W	W	W	A
	Salmon (Pitka Fork) aerial	NS	W	W	W	A	W	W
	Kogrukluk River Weir	NS	W	W	A	A	A	W
Chum	M F Goodnews River weir	A	W	W	W	W	A	A
	Kanektok River areial	A	NS	NS	NS	NS	NS	NS
	Kogrukluk River Weir	A	A	W	W	A	A	A
	Aniak sonar	B	W	W	A	A	A	A
Kotzebue								
Sockeye	Kanektok River aerial	W	B	A	A	A	A	NS
	Goodnews River aerial	W	NS	W	A	NS	A	NS
	M F Goodnews River weir	W	B	W	W	A	A	A
Coho	Kwiniuk River aerial	W	NS	W	W	NS	NS	A
	Niukluk River/Ophir Creek aerial	W	W	NS	W	NS	NS	W
	North River aerial	NS	B	NS	W	A	NS	A
Chum	Noatak and Eli Rivers aerial	W	NS	NS	B	NS	A	NS
	Upper Kobuk w/ Selby River aerial	W	NS	W	A	NS	NS	NS
	Salmon River aerial	W	NS	NS	NS	NS	NS	NS
	Tutuksuk aerial	W	NS	NS	NS	W	NS	NS
	Squirrel aerial	W	NS	NS	NS	NS	NS	NS

Note: NA=Figure not available, NS=No survey.

Figure 4.–Arctic-Yukon-Kuskokwim region salmon escapements compared to goals for the years 2001 to 2007.

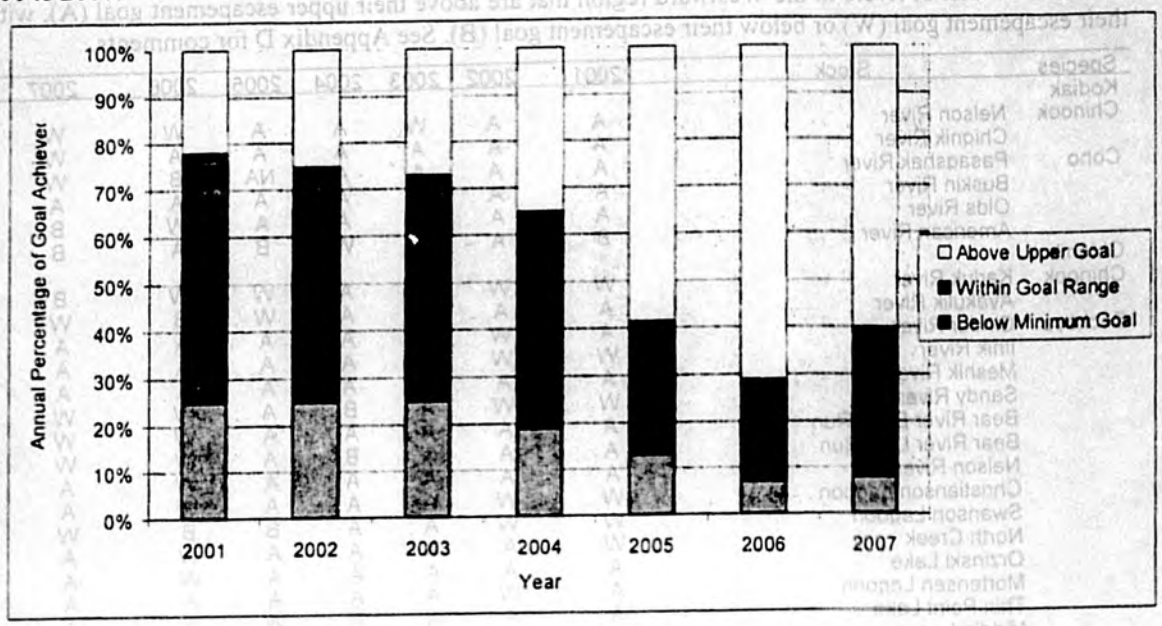


Table 7.–Arctic-Yukon-Kuskokwim region salmon escapements compared to goals for the years 2001 to 2007.

AYK Region	2001	2002	2003	2004	2005	2006	2007
Total Stocks	59	60	60	68	60	55	60
Below Minimum Goal							
• Number	15	15	15	13	8	4	5
• Percent	25%	25%	25%	19%	13%	7%	8%
Within Goal Range							
• Number	31	30	29	31	17	12	19
• Percent	53%	50%	48%	46%	28%	22%	32%
Above Upper Goal							
• Number	13	15	16	24	35	39	36
• Percent	22%	25%	27%	35%	58%	71%	60%

REGION 4: WESTWARD REGION

Table 8.–List of rivers in the Westward region that are above their upper escapement goal (A), within their escapement goal (W) or below their escapement goal (B). See Appendix D for comments.

Species	Stock	2001	2002	2003	2004	2005	2006	2007
Kodiak								
Chinook	Nelson River	A	A	W	A	A	W	W
	Chignik River	A	A	A	A	A	A	W
Coho	Pasagshak River	A	A	A	A	NA	B	W
	Buskin River	A	A	A	A	A	A	A
	Olds River	A	A	A	A	A	W	B
	American River	B	A	W	W	B	A	B
Chignik								
Chinook	Karluk River	W	W	W	A	W	W	B
	Ayakulik River	A	A	A	A	W	B	W
Sockeye	Cinder River	A	W	A	A	A	A	A
	Ilnik River	W	W	A	A	A	A	A
	Meshik River	A	A	A	A	A	A	A
	Sandy River	W	W	A	B	A	W	W
	Bear River Early Run	A	A	A	A	A	W	W
	Bear River Late Run	A	A	A	B	A	W	W
	Nelson River	A	A	A	A	A	W	A
	Christianson Lagoon	W	W	A	A	A	W	A
	Swanson Lagoon	W	W	A	A	B	B	W
	North Creek	W	A	A	A	A	W	A
	Orzinski Lake	A	A	A	A	A	W	A
	Mortensen Lagoon	A	W	A	A	A	A	A
	Thin Point Lake	A	A	A	A	W	W	A
	Middle Lagoon	A	A	W	A	B	EI 2006	
	McLees Lake	A	A	A	EI 2004			
	Chignik River Early Run	A	W	B	W	W	W	W
	Chignik River Late Run	A	A	A	W	W	A	W
	Malina Creek	A	A	W	W	W	W	A
	Pauls Bay	W	W	W	W	B	B	EI 2007
	Litnik River	B	B	B	B	W	W	A
	Little River	B	A	A	W	EI 2005		A
	Uganik Lake	B	B	W	A	EI 2005		A
	Karluk River Early Run	A	A	A	A	A	W	A
	Karluk River Late Run	W	W	A	B	A	W	A
	Ayakulik River	W	W	B	W	W	B	W
	Upper Station River Early Run	W	W	A	A	W	B	W
	Upper Station River Late Run	B	W	A	W	W	W	W
	Akalura River	B	B	B	B	EI 2005		
	Frazer Lake	W	B	A	A	W	W	W
	Saltery Lake	A	A	A	A	W	W	W
	Pasagshak River	W	W	A	A	A	W	A
	Buskin Lake	A	A	A	A	A	A	A
Coho	Nelson River	A	A	A	A	A	A	A
	Thin Point Lake	A	A	A	A	A	A	A
	Litnik River	A	A	B	NA	EI 2005		
	Portage Creek	NA	NA	B	W	EI 2005		
	Bear Creek	A	W	A	W	EI 2005		
	Big Bay Creek	W	A	B	W	EI 2005		
	Pauls Lake	A	B	W	B	EI 2005		
	Karluk River	A	A	B	W	EI 2005		
	Ayakulik River	B	A	B	B	EI 2005		
	Upper Station River	W	A	B	A	EI 2005		
	Akalura River	W	A	A	NA	EI 2005		
	Dog Salmon River	B	A	W	NA	EI 2005		
	Saltery Lake	B	B	B	NA	EI 2005		
	Roslyn Creek	W	W	B	B	EI 2005		

-continued-

Table 8. Page 2 of 2.

Species	Stock	2001	2002	2003	2004	2005	2006	2007
Chignik								
Pink	Bechevin Bay Section Index (5 systems) odd year	A		B		A		A
	Bechevin Bay Section Index (5 systems) even year		B		A		A	
	SE District Mainland Index (45 systems) all years	W	W	A	A	A	A	MO
	Shumagin Islands Section Index (27 systems) all years	W	W	A	A	A	A	MO
	South Central District Index (16 systems) odd year	W		A		A		MO
	South Central District Index (16 systems) even year		W		A		A	MO
	Southwestern District Index (45 systems) odd year	B		A		A		MO
	Southwestern District Index (45 systems) even year		A		A		A	MO
	Unimak District Index (10 systems) odd year	B		A		B		MO
	Unimak District Index (10 systems) even year		B		B		B	MO
	South Peninsula Total even-year		A		A		A	
	South Peninsula Total odd-year	W		A		A		W
	Unalaska District (17 streams) even year		B					
	Unalaska District (17 streams) odd year	W		W		MO	MO	MO
	Chignik Bay District Index (3 streams)	A	A	A	A	MO	MO	MO
	Central District Index (8 streams)	A	B	A	A	MO	MO	MO
	Eastern District Index (21 streams)	A	A	A	A	MO	MO	MO
	Western District Index (6 streams)	A	A	A	A	MO	MO	MO
	Perryville District Index (9 streams)	A	B	B	A	MO	MO	MO
	Entire Chignik Management Area Peak (Even Years)		A		A		W	
	Entire Chignik Management Area Peak (Odd Years)	A		A		A		W
	All KMA Districts except the Mainland District					W	A	W
	Mainland District Index (16 systems) odd year	W		A		B		W
	Mainland District Index (16 systems) even year		A		W		A	
	Afognak District Index (8 systems, 1 weir) odd year	A		A		MO	MO	MO
	Afognak District Index (8 systems, 1 weir) even year		W		W	MO	MO	MO
	Northwest Kodiak District Index (9 systems) odd year	A		A		MO	MO	MO
	Northwest Kodiak District Index (9 systems) even year		A		A	MO	MO	MO
	Southwest Kodiak District Index (3 systems) odd year	A		A		MO	MO	MO
	Southwest Kodiak District Index (3 systems) even year		W		A	MO	MO	MO
	Alitak Bay District Index (4 systems, 1 weir) odd year	A		A		MO	MO	MO
	Alitak Bay District Index (4 systems, 1 weir) even year		A		A	MO	MO	MO
	Eastside Kodiak District Index (7 systems) odd year	A		A		MO	MO	MO
	Eastside Kodiak District Index (7 systems) even year		A		A	MO	MO	MO
	Northeast Kodiak District Index (3 systems) odd year	A		A		MO	MO	MO
	Northeast Kodiak District Index (3 systems) even year		W		A	MO	MO	MO
Chum	Northern District Index (44 streams)	A	A	W	W	A	A	A
	Northwestern District Index (25 streams)	W	W	W	A	W	W	A
	Shumagin Islands Section Index			B	A	A	A	NA
	SE District Mainland Index (22 streams)	A	A	A	A	A	A	W
	SE District Index (incl. Shumagin and SEDM indices)	A	A	A	A	A	A	NA
	South Central District Index (13 streams)	W	W	B	A	A	W	W
	Southwestern District Index (23 streams)	A	A	W	W	A	A	A
	Unimak District Index (3 streams)	B	W	B	B	A	A	A
	Chignik Bay District Index (3 streams)	A	B	B	B	A	A	MO
	Central District Index (6 streams)	B	B	A	B	A	B	MO
	Eastern District Index (20 streams)	A	A	A	A	A	A	MO
	Western District Index (6 streams)	A	A	A	B	A	A	MO
	Perryville District Index (7 streams)	A	B	A	B	A	A	MO
	Entire Chignik Area	A	A	A	A	A	A	MO
	Mainland District Index (17 streams)	W	W	B	W	B	A	B
	Northwest Kodiak District Index (8 streams)	A	W	W	B	B	B	MO
	Southwest Kodiak District Index (1 stream)	B	W	B	B	B	A	MO
	Alitak Bay District Index (6 streams)	W	W	W	W	A	B	MO
	Eastside Kodiak District Index (16 streams)	W	A	W	W	A	A	MO
	Northeast Kodiak District Index (~18 streams)	W	W	B	B	B	A	MO
	Kodiak Archipelago Aggregate	NA	NA	NA	NA	NA	NA	A

Note: NA=Figure not available, NS=No survey, El=Eliminated, MO=Changed from escapement goal to a management objective (managed at the regional level).

Figure 5.–Westward region salmon escapements compared to goals for the years 2001 to 2007.

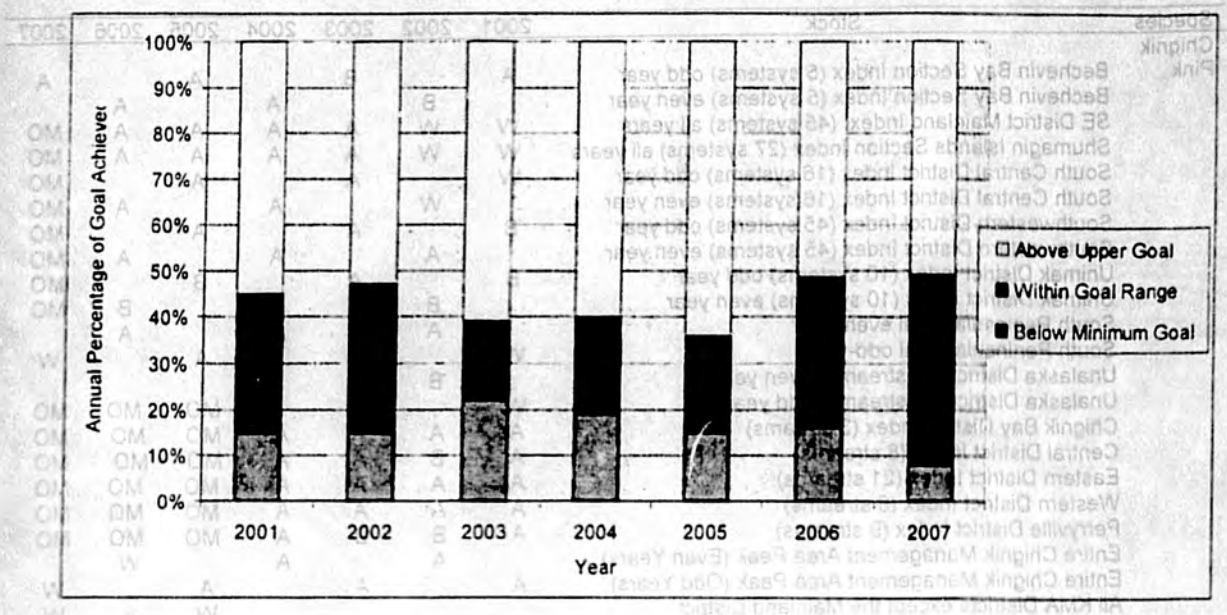


Table 9.–Westward region salmon escapements compared to goals for the years 2001 to 2007.

Westward Region	2001	2002	2003	2004	2005	2006	2007
Total Stocks	93	93	95	89	67	68	51
Below Minimum Goal							
• Number	14	14	21	17	10	11	4
• Percent	15%	15%	22%	19%	15%	16%	8%
Within Goal Range							
• Number	28	30	16	19	14	22	21
• Percent	30%	32%	17%	21%	21%	32%	41%
Above Upper Goal							
• Number	51	49	58	53	43	35	26
• Percent	55%	53%	61%	60%	64%	51%	51%

APPENDICES

Appendix A1.–Comments on Region 1 Southeast Alaska Chinook salmon unharvested surplus for 2007.

Blossom River (survey count)	None
Keta River (survey count)	Chinook salmon fisheries in Southeast Alaska are managed under provisions of the Pacific Salmon Treaty (PSC). The Chinook Technical Committee of the PSC determines what the Southeast Alaska (SEAK) all-gear harvest allocation is each year. That all-gear harvest allocation is then further allocated to user groups under the provisions of a Board of Fisheries (BOF) management plan. For most Chinook stocks in SEAK, there are no specific terminal-directed fisheries (transboundary rivers Stikine, Taku, and Alsek excluded) so the harvest takes place in highly mixed stock marine fisheries. Management actions to target specific wild stocks are limited as management must be in accordance with BOF plans. There are no inriver sport fisheries for wild stock Chinook salmon allowed in SEAK.
Unuk River (survey count)	See Keta River.
Chickamin River (survey count)	See Keta River.
Stikine River (mark-recapture)	Up until 2005 directed commercial fisheries were not allowed on Stikine Chinook under provisions of the Pacific Salmon Treaty. The commercial drift gillnet fishery did not open until the majority of the Stikine River Chinook had entered the river. The Parties (U.S and Canada) reached agreement on directed fishery regimes in 2005. Based on inseason abundance information in 2005 the stock was projected to be within EG but postseason analysis resulted in an increased escapement number.
Andrew Creek (survey count)	See comments for Stikine. Andrews Creek is a tributary on Stikine on the Alaska side of the border.
Taku River (mark-recapture)	As with the Stikine, directed fisheries were not allowed on Taku Chinook until the 2005 season. Up to that year the drift gillnet fishery did not open (for sockeye) until the majority of the run had passed into the river.
Chilkat River (mark-recapture)	There are no directed terminal commercial fisheries for Chilkat Chinook salmon. The fishery opens for sockeye after the majority of the Chinook are in the river (BOF regulation). The BOF adopted a management plan for the stock in 2003. Provisions of that plan allow for increased bag and possession limits for sport fishery if the run is projected to exceed the upper end of the goal.
Klukshu River (weir)	The Kluckshu is a tributary of the Alsek River in Canada. Directed fisheries on Alsek/Kluckshu Chinook are not currently allowed under terms of the Pacific Salmon Treaty. Such fisheries are part of ongoing negotiations with Canada.
Situk River (weir)	The Situk Chinook fishery is managed under provisions of a BOF management plan.

Note: There are no traditional directed purse seine fisheries for Chinook salmon in SEAK.

Appendix A2.–Comments on Region 1 Southeast Alaska sockeye salmon unharvested surplus for 2007.

System	Comments
Hugh Smith Lake	The Hugh Smith sockeye stock was adopted as a stock of management concern (SOC) by the BOF in 2003 (only SOC in SEAK). The department created and the BOF adopted an Action Plan to reduce the exploitation on the stock. Management actions listed in the Action Plan are driven by the inseason projection of escapement based on weir counts. At times, the weir count projections early in the season have triggered fishery closures (fish harvested incidentally in District 1 purse seine and drift gillnet fisheries) that were not really necessary but the department was bound to follow the terms of the Action Plan. The BOF "delisted" the stock as a SOC in 2006. Because of that the department is in a position to be somewhat less restrictive in terms of taking management actions outlined in the Action Plan. The department does intend to be fairly conservative in our management approach for the stock because of past escapement concerns but not as conservative as when the stock was a SOC.
Tahltan Lake	Tahltan Lake is located in Canada and drains into the Stikine River. The Stikine River sockeye drift gillnet fishery is managed under provisions of the Pacific Salmon Treaty. The Treaty specifies harvest shares for the U.S. and Canada. Stock assessment projects for the Stikine are not as fully developed as for the Taku River, but fishery managers have had sufficient stock assessment data inseason to determine that the runs in recent years have been large. Because of this the department has provided substantial fishing opportunity (increased days open) for the bulk of the return. As with Taku sockeye the reasons for escapement surpluses are complex. A factor that certainly impacted the U.S. harvest in 2006 is that fishermen were targeting enhanced chum salmon returning to SSRAA's Anita Bay release site in large numbers.
Mainstem Stikine River	See comments for Tahltan regarding Treaty. The Stikine mainstem sockeye run was exceptionally strong in 2003 and both the U.S. and Canada recognized that inseason and had extended fisheries targeting the stock. This is somewhat unusual as the mainstem component is often a limiting factor in terms of fishing time later in the summer after the Tahltan (earlier run timing) stock has passed through the fisheries.
Taku River	The Taku River sockeye drift gillnet fishery is managed under provisions of the Pacific Salmon Treaty. The Treaty specifies harvest shares for the U.S. and Canada. The department and the Department of Fisheries and Oceans Canada jointly operate a fish wheel mark-recapture program to evaluate salmon returns to the drainage. The department's share of the sockeye part of the program is funded by federal PSC grants. The fish wheel program is one of the best stock assessment programs on the coast and managers rely heavily on information from the project inseason. Reasons for exceeding the spawning escapement objective for this drainage are fairly complex and are probably caused by a variety of factors. They include fishermen targeting abundant hatchery chum salmon returning to Douglas Island Pink and Chum (DIPAC) release sites in the area, fishermen avoiding very abundant pink salmon in the area in the last two years, fishermen targeting enhanced sockeye returning to DIPAC's Snettisham Hatchery, and other driftnet fishing opportunites in the region. Effort in the fishery has been below average in recent years as well. Another factor that certainly leads to increased escapement is the department has limited fishing time in Taku Inlet specifically to reduce the exploitation rate on Tatsamenie Lake sockeye that return later in the summer and overlap with abundant Taku mainstem sockeye stocks. In 2005 and 2006 fishermen also targeted Chinook salmon during the early part of the sockeye return using larger mesh nets that are less efficient in capturing sockeye salmon.

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System	Comments
Redoubt Lake	The BOF adopted a fishery management plan for Redoubt sockeye salmon in 2003. Provisions of the plan allow for various specific fishery management actions depending on the projected escapements at the weir (operated by the U.S. Forest Service). Redoubt supports one of the most significant sockeye subsistence harvests in Southeast Alaska. Commercial purse seine openings are allowed at relatively high run sizes (40,000 fish or higher). The deparment has opened the commercial seine fishery under the provisions of the management plan in 2004-2007 but fishing effort was light presumably due to more certain economic opportunities for pink and chum salmon in nearby areas.
Chilkat Lake	The department revised the Chilkat sockeye escapement goal in 2005. The upper bound was increased to 200,000 fish from 106,000 fish. Funding for Chilkat sockeye stock assessment is currently on a year to year basis through federal grants (Pacific Coastal Salmon Recovery Fund). In the past, the weir and/or fish wheels had been funded via general fund. That funding was cut due to decements four years ago.
Chilkoot Lake	The department operates an adult counting weir for sockeye on the Chilkoot River (funded via general fund). The weir is an essential tool for managing the District 15 driftnet fishery. Because the weir counts were strong early in the season and escapement objectives were projected to be met, the department had very aggressive openings (24/7 for much of the season) to target those fish. Effort was somewhat limited due to pink salmon abundance.
East Alsek-Doame River	The East River is in the Yakutat forelands near the Alsek River. In recent years the department has opened the fishery for extended periods of time, but harvests have been low due to reduced effort. Dry Bay (Alsek and East) fisheries have high costs for getting fish to markets/processors as the fish have to be flown out of the area.
Klukshu River	The Kluckshu River is a tributary of the Alsek River in Canada. The Alsek is managed under provisions of the Pacific Salmon Treaty. Sockeye returns to Kluckshu in 2002 and 2003 were very strong. The 2003 return may have been the largest total return on record. Management of the fishery is driven only by fishery performance data (CPUE) and is thus somewhat limited in terms of specific abundance information. Despite this the department has successfully managed this fishery over the long-term.
Lost River	In 1999 the Lost River carved a new channel—instead of entering directly into the Gulf of Alaska, it now discharges into the Situk Lagoon. Because this is a much smaller stock than Situk, the department has imposed commercial closed waters along the Situk Lagoon adjacent to the Lost in recent years. Harvest of Lost River sockeye is pretty much bycatch to harvest of more abundant Situk stock.
Situk River	The Situk Inlet set net sockeye fishery is managed based on escapement information from the Situk weir. The weir is a critical tool for management of this, the most important fishery in the Yakutat area. Funding for the weir is currently short term (one year) and is unstable (used to be on general fund, but cut due to decrements). In the two years with surplus escapements, the department did open the fishery 24/7 once we were sure escapement objectives would be met. Fishing effort in the Situk fishery declines as large numbers of pink salmon enter the fishery (which happened in 2003 and 2006) because of the low price offered for that species. The fact fishermen do try to avoid pink salmon does reduce the exploitation rate on Situk sockeye in big pink years. There was also below average effort in the Situk fishery in 2003—presumably due to relatively low prices for all salmon.

Appendix A3.–Comments on Region 1 Southeast Alaska coho salmon unharvested surplus for 2007.

System	Comments
Hugh Smith Lake	SEAK coho salmon are primarily harvested in the highly mixed stock salmon troll fishery (averge exploitation in troll is about 40%, total exploitation about 60%). There are also drift gillnet fisheries in near terminal areas that harvest more discrete stocks. The troll fishery is managed on a regional basis. Trollers may retain coho salmon beginning on June 15 (although there are very few coho around until July) and the season closes by regulation on September 20. The department may, and has, extend the fishery through September 30 if run strength warrants it. The department has extended the troll fishery through September 30 in all or portions of the region in 2001–2004 and 2006. The point here is the fishery that harvests the majority of the coho salmon in SEAK is open about as much as it can be. Driftnet fisheries are managed on a weekly basis with fishing periods of 2–7 days per week depending upon inseason stock assessment data. The region I sport fishery has a six fish daily bag limit and is open for the entire year.
Taku River	Taku River coho salmon returns have been very strong in recent years. The fishery is managed in accordance with provisions of the Pacific Salmon Treaty, but it has not been Treaty constraints that have hampered the coho harvest. One factor that hampers the Taku coho harvest is that the department has taken conservative management actions to protect co-migrating fall chum salmon. Once chum salmon are not a factor the department has been more aggressive, in some cases 24/7 openings, but in general effort has been low.
Auke Creek	See Hugh Smith comment.
Montana Creek	See Hugh Smith comment.
Peterson Creek	See Hugh Smith comment.
Ketchikan Survey Index	See Hugh Smith comment.
Sitka Survey Index	See Hugh Smith comment.
Ford Arm Lake	See Hugh Smith comment.
Berners River	See Hugh Smith comment. The department does open a driftnet fishery in Section 15-B (Berners Bay) to target Berners River coho salmon when run strength warrants it. Section 15-B has been open in 2002–2004 and 2006.
Chilkat River	Chilkat River coho salmon are mostly harvested in the mixed stock region-wide troll and District 15 driftnet fisheries. The troll fishery is managed as described above in the Hugh Smith comments. The department has managed the District 15 driftnet fishery somewhat conservatively in recent years to reduce the exploitation on Chilkat fall chum salmon that have a similar run timing to Chilkat coho. It is safe to say that the conservative fishing time to reduce exploitation on fall chum has limited the harvest of Chilkat coho salmon.
Italio River	The Italio coho stock is a relatively small run. The department opens the fishery when we know we have met the escapement objectives. In most cases when the fishery has been opened in recent years, effort has been very low, presumably because of fishing opportunity in the Situk fishery, which is road accessible.
Lost River	The Lost River discharges into Situk Lagoon. Fishery management in the Lagoon is driven mostly by decisions made for Situk stocks.
Situk River	The coho salmon return to Situk in 2002 was the second largest run on record. The department opened the fishery 24/7 when it was projected escapement goals would be exceeded. Effort in the fishery overall was well below average.
Tsiu/Tsivat Rivers	The Tsiu River is very remote and coho salmon harvested in the commercial set net fishery must be flown to markets. Due to low prices in 2002 and 2003 the river was not fished at all despite extended openings.

Appendix A4.–Comments on Region 1 Southeast Alaska pink salmon unharvested surplus for 2007.

System	Comments
Southern Southeast	The department does not know what the total pink salmon return is in SEAK. We do know that the commercial harvest has averaged about 50 million fish annually since the early 1990s. We do know that in some years the harvest could have been substantially higher and not negatively affected escapements and production. The harvest in many years of high production is not limited by fishing opportunity, but by processing capacity. Companies have frequently placed purse seine vessels on harvest limits during the peak of the run. The biological escapement goals are index goals for a subset of pink salmon producing streams in the region. There are roughly 2,500 streams that produce pink salmon in SEAK and the department surveys 718 of these streams on a regular basis. Fishery openings are based on aerial survey counts conducted by area management biologists. The aerial survey program relies heavily on Federal grants on an annual basis. Survey costs have increased dramatically in recent years and GF budgets have decreased.
Northern Southeast Inside	See comment above.
Northern Southeast Outside	See comment above.
Situk River (even-year)	Setnet permit holders fishing in the Situk Lagoon commonly try and limit their harvest of pink salmon. This is because of the low prices for the fish. In some cases permit holders choose not to fish—even though the fishery is open—until pink salmon have passed through the lagoon.

Appendix B1.–Comments on Region 2 Chinook salmon unharvested surplus for 2007.

System	Comments
Upper Cook Inlet Chinook salmon	Although a few stocks of Chinook salmon exceeded their escapement goal in Upper Cook Inlet, these stocks are targeted by sport fishers, not commercial fishers.

Appendix B2.–Comments on Region 2 sockeye salmon unharvested surplus for 2007.

System	Comments
English Bay	The forecast for English Bay was poor and the season began with this area closed. Once the escapement goal was achieved, the area was opened, but because it was later in the season, only a few fishermen participated.
Delight Lake Chenik Lake	These runs were very strong. Although fishing was open and liberalized, there was insufficient effort to harvest the entire surplus.
Bear Lake	The SEG is combined with the hatchery broodstock goal to create a "desired inriver return", which was achieved in 2007. The entire available surplus was harvested by hatchery and commercial fishers.
Amakdedori Creek	This system is small and not associated with a lake. Because it is a small system, no targeted commercial fishing is allowed.
Crescent River	Because of the remoteness of this fishery, there is a lack of effort and tender support.
Kasilof River	The current management plans allotted fishing time prior to July 9 is not sufficient to harvest excess fish in years of large returns (2 regular scheduled periods plus up to 48 hours of additional E.O. time). The 48-hour window closure is problematic when large passage rates occurred during the closure. These two factors have kept the department from being able to manage for the escapement goal.
Naknek River Egegik River Ugashik River Wood River Igushik River Togiak River	The 2007 sockeye salmon run to Bristol Bay was approximately 29% above the preseason forecast. Although the commercial harvest of sockeye salmon was 12% above the preseason forecast, escapement goals were exceeded in Bristol Bay for the same reason. Limitations in processing capacity affected the department's ability to control sockeye escapements into most systems in Bristol Bay. Escapements into the Kvichak, Nushagak, and Togiak Rivers fell within established SEG ranges. All other systems were above established ranges. A record run to the Ugashik District and a strong Naknek River run contributed to high escapement in those systems.
Coghill Lake	Because of other fisheries more accessable and easier to fish, there is a lack of effort to harvest excess sockeye salmon in this area.
Copper River	This run was very strong. Although fishing was open and liberalized, there was insufficient effort to harvest the entire surplus.

Appendix B3.– Comments on Region 2 pink salmon unharvested surplus for 2007.

System	Comments
Barabara Creek Seldovia Creek Port Graham River	Fishermen in these areas target sockeye salmon. Pink salmon are considered a bycatch. Also, effort and catches are low because of the run timing differential between the two species.
Windy Creek Right Rocky River Island Creek Bruin River Sunday Creek Brown's Peak Creek	Natural returns of pink salmon, usually the dominant species in numbers of commercially harvested salmon in LCI, were considered relatively good this year. Unfortunately, despite the numerous and fairly liberal openings to target these natural stocks, overall catches (both natural and hatchery) totaled only 287,400 fish, primarily because of erratic tender service to, and lack of available buyers in, remote LCI districts (natural stocks) and a weak return to the single remaining pink salmon hatchery in LCI.

Appendix B4.–Comments on Region 2 chum salmon unharvested surplus for 2007.

System	Comments
Ursus Cove	There was reduced incentive because nearby areas were closed to fishing, marginal surpluses made the effort difficult to economically justify, and there was a lack of tender service and buyers in remote districts.

Appendix C1.–Comments on Region 3 AYK Chinook salmon unharvested surplus for 2007.

System	Comments
N.F. Goodnews River M.F. Goodnews River Kanektok River	The harvest was limited by conservative management and by processing capacity and low effort.
Kogrukluk River Kwethluk River Tuluksak River George River Kisaralik River Aniak River Salmon River (Aniak River tributary) Holitna River Cheeneetnuk River (Stony River tributary) Gagaryah (Stony River Tributary) Salmon River (Pitka Fork River tributary)	The harvest was limited by processing capacity and low effort, conservative management due to a recent designated stock of concern status, and ensuring subsistence fishing needs are met.
Kwiniuk River (tower)	The harvestable surplus was due to lack of commercial markets.
Anvik River (aerial survey)	Conservative management based on stock of concern status resulted in lower harvest.
Chena River (tower) Salcha River (tower)	The Chena and Salch River are tributaries of the Tanana River and are managed as a terminal fishery with a guideline harvest range of 600 to 800 Chinook in District 6. This range can be exceeded if escapement projects in the drainage indicate a harvestable surplus exists; however, in this district flesh quality is greatly reduced and there has been only limited commercial interest.
Canada Mainstem (mark/recapture)	Conservative management based on stock of concern status and meeting treaty obligations resulted in lower harvests since 2000.

Appendix C2.–Comments on Region 3 AYK sockeye salmon unharvested surplus for 2007.

System	Comments
M.F. Goodnews River N.F. Goodnews River Kanektok River	The harvest was limited by processing capacity and low effort.
Pilgrim River	The commercial sockeye fishery was initiated by BOF in 2007. The unharvested surplus in 2007 was the result of low fishing effort. Pilgrim River weir and Salmon Lake/Grand Central River aerial survey assess similar escapement via different methods.

Appendix C3.–Comments on Region 3 AYK coho salmon unharvested surplus for 2007.

System	Comments
M.F. Goodnews River	The harvest was limited by processing capacity and low effort.
Kogrukluk River	The harvest was limited by processing capacity and low effort.
Kwiniuk River	Unharvestable surplus of coho salmon in Norton Sound is generally the result of reduced commercial market/capacity.
Delta Clearwater River	The harvest of Tanana River coho stocks has been dependent on conservative management of fall chum salmon fishery and reduced commercial fishing effort.

Appendix C4.–Comments on Region 3 AYK pink salmon unharvested surplus for 2007.

System	Comments
Kwiniuk River	Since 2000 there has been no commercial market for pink salmon. However, the harvestable surplus of pink salmon in some subdistricts in Norton Sound (e.g. Subdistrict 1) goes unexploited due to protection afforded to other species.

Appendix C5.–Comments on Region 3 AYK chum salmon unharvested surplus for 2007.

System	Comments
M.F. Goodnews River Kogrukluk R. Weir Aniak Sonar	The harvest was limited by processing capacity and low effort, as well as a nonexistent chum salmon market.
Noatak and Eli Rivers	The Kotzebue chum Salmon unharvested surpluses were the result of reduced market interest.
Sinuk River	The Subdistrict 1 unharvested surpluses were the result of conservative regulations and management plans to meet escapement goals and subsistence priority.
Niukluk River	The Subdistricts 2 and 3 unharvested surpluses were the result of reduced market interest.

Appendix C6.–Comments on Region 3 AYK Yukon River summer chum salmon unharvested surplus for 2007.

System	Comments
E.F. Andreafsky R. (weir count)	The Andreafsky River has not shown increased production—unlike systems in the middle and upper Yukon River. However, there is little commercial interest in this stock due to the quality of the fish and depressed market conditions.
Anvik R. (sonar estimate)	The Anvik River has historically contributed approximately 40% of the summer chum returning to the Yukon River. This system has not shown the increased production that has been seen in the middle and upper Yukon River summer chum stocks. The Anvik River management plan allows an inriver summer chum fishery if the escapement is projected to be 500,000 or more. In 2005 and 2006, escapement would have allowed an inriver fishery; however, no commercial market was available. However, increased market demand was observed in 2007.
Pilot Station Sonar (Sonar estimate)	Harvestable surplus has been foregone in recent years because of the lack of a commercial market. However, increased market demand was observed in 2007. The Yukon River Summer Chum Management Plan (5 AAC 05.362) has an inriver goal of 1 million summer chum salmon, based on Pilot Station sonar estimates and projections, which will allow for river-wide commercial fisheries. This level of passage will allow for escapement and subsistence uses. Harvestable surplus based on commercial harvest upstream from Pilot Station is subtracted from Pilot Station sonar estimates.

Appendix C7.–Comments on Region 3 AYK Yukon River fall chum salmon unharvested surplus for 2007.

System	Comments
Yukon River Drainage (foot surveys, mark/recapture, and sonar estimates)	Low market interest and conservative management based on stock of concern status and meeting treaty obligations resulted in low harvests.
Tanana River Delta River	Low market interest and conservative management based on stock of concern status resulted in low harvests.
Toklat River	Escapement surveys were incomplete in 2005. In 2006 and 2007 escapement survey funding was not available.
Upper Yukon River Tributary	Same as Yukon River Drainage
Chandalar River	Same as Yukon River Drainage
Sheenjek River	Same as Yukon River Drainage
Fishing Branch River (Canada)	The escapement goal is based on the US/Canada Agreement and not on a BEG. Since the start of the counting weir in 1985, the Agreement goal has been exceeded once—which conincided with the drainage-wide record run in 2005. Interim escapement objectives have been agreed to by the Yukon Panel since 2003.
Yukon R. Mainstem (Canada) Canadian Mainstem surplus is estimated by calculating total allowable catch for stock and applying the maximum U.S. harvest share (0.71).	Low market interest and conservative management based on stock of concern status and meeting treaty obligations resulted in low harvests. Interim escapement objectives have been applied from 2002 to 2004 so un-harvested surplus has been calculated relative to goals.

Appendix D1.–Comments on Region 4 Westward Chinook salmon unharvested surplus for 2007.

System	Comments
Nelson River	Surplus escapements were primarily due to lack of industry interest and minimal fishing effort rather than any specific management action.
Chignik River	There is no directed commercial Chinook salmon fishery in Chignik, although there are steady sport fish harvests upstream from the weir.
Karluk River	Due to low sockeye salmon escapements in recent years, Karluk River has not opened to commercial fishing during Chinook run timing. Chinook are not actively, commercially managed in the Kodiak Management Area.
Ayakulik River	Due to low sockeye salmon escapements in recent years, the Ayakulik has not opened to commercial fishing during Chinook run timing. Chinook are not actively, commercially managed in the Kodiak Management Area.

Appendix D2.–Comments on Region 4 Westward sockeye salmon unharvested surplus for 2007.

System	Comments
Cinder River	Surplus escapements were primarily due to lack of industry interest and minimal fishing effort rather than any specific management action.
Ilnik River	Regulations did not provide adequate harvest opportunity on early portion of run. This was changed during February 2007 BOF meeting.
Meshik River	Surplus escapements were primarily due to lack of industry interest, minimal fishing effort and restrictive regulations—that were changed during the February 2007 BOF meeting.
Bear River Early Run	Surplus escapements were primarily due to lack of industry interest and minimal fishing effort rather than any specific management action.
Nelson River	Surplus escapements were primarily due to strong runs while almost continuous fishing opportunity was permitted by the department.
North Creek	Surplus escapements were primarily due to lack of industry interest and minimal fishing effort rather than any specific management action.
Orzinski Lake Mortensen Lagoon Thin Point Lake	There has been a lack of interest or participation by the commercial fleet in some areas either due to geography, time of year, or any number of reasons.
Chignik River Late Run	This river is managed for an additional 50,000 (MO) for subsistence needs, and processor closures in August and fishery "stand downs" have contributed to surplus escapements.
Karluk River Early Run	Managers can't open the season until the upper limit goal has been assured, thereby leading to overescapement concerns if the run comes early. Overescapement is often due to a lack of industry interest and lack of effort by commercial fishermen, rather than from any specific management action.
Karluk River Late Run	The Karluk late-run begins to peak in late August. This area was overescaped primarily due to lack of industry interest and lack of effort by commercial fishermen rather than by any specific management action. In some years of overescapement, there were quality issues due to the sockeye blushing up.

-continued-

Appendix D2. Page 2 of 2.

System	Comments
Saltery Lake	Due to the increasing costs of running weirs and the gradual erosion of general funds for the department, the weir was discontinued for the 2004 season and escapements are estimated using aerial surveys. The Saltery system is a small glacially fed lake. Sockeye are difficult to survey in this system due to the turbidity of the lake. Generally the sockeye are visible when they begin to stage at the mouths of spawning streams. Usually this occurs after the majority of the run has returned. The Saltery did have a salmon counting weir prior to 2004 and managers were able to closely monitor escapements and provide liberal fishing opportunities if there appeared to be overescapement issues. However, even with commercial fishing open to the mouth of Saltery, seiners were not able to harvest enough of the sockeye to prevent overescapement. Due to the increasing costs of running weirs and the gradual erosion of general funds for the department, the weir was discontinued for the 2004 season and escapement are estimated using aerial surveys.
Pasagshak River	Commercial fishers generally do not target this stock.
Buskin Lake	The Buskin River Section remains closed to commercial salmon fishing until July 6. The majority of the sockeye run has passed the weir prior to the first commercial opening.

Appendix D3.–Comments on Region 4 Westward coho salmon unharvested surplus for 2007.

System	Comments
Nelson River (no 2007 numbers) Thin Point Lake (no 2007 numbers)	Surplus escapements were primarily due to lack of industry interest and minimal fishing effort rather than any specific management action.
Pasagshak River Buskin River Olds River American River	Commercial fishers generally do not target this stock.

Appendix D4.–Comments on Region 4 Westward pink salmon unharvested surplus for 2007.

System	Comments
Bechevin Bay Section - odd year Bechevin Bay Section - even year South Peninsula Total - odd year South Peninsula Total - even year Entire Chignik Area - odd year	Surplus escapements were primarily due to lack of industry interest and minimal fishing effort rather than any specific management action.

Appendix D5.–Comments on Region 4 Westward chum salmon unharvested surplus for 2007.

System	Comments
Northern District Southeastern District Southwestern District Unimak District Entire Chignik Area	Surplus escapements were primarily due to lack of industry interest and minimal fishing effort rather than any specific management action.

Regional Information Report No. 5J08-03

Estimated Numbers of Salmon Above the Upper Range of the Escapement Goal and Estimated Value of Unharvested Fish

by

Geron Bruce

and

Michael D. Plotnick

March 2008

Alaska Department of Fish and Game **Division of Commercial Fisheries**



Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, Special Publications and the Division of Commercial Fisheries Regional Reports. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

REGIONAL INFORMANTION REPORT NO. 5J08-03

ESTIMATED NUMBERS OF SALMON ABOVE THE UPPER RANGE OF THE ESCAPEMENT GOAL AND ESTIMATED VALUE OF UNHARVESTED FISH

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March 2008

The Regional Information Report Series was established in 1987 and was redefined in 2006 to meet the Division of Commercial Fisheries regional need for publishing and archiving information such as project operational plans, area management plans, budgetary information, staff comments and opinions to Board of Fisheries proposals, interim or preliminary data and grant agency reports, special meeting or minor workshop results and other regional information not generally reported elsewhere. Reports in this series may contain raw data and preliminary results. Reports in this series receive varying degrees of regional, biometric and editorial review; information in this series may be subsequently finalized and published in a different department reporting series or in the formal literature. Please contact the author or the Division of Commercial Fisheries if in doubt of the level of review or preliminary nature of the data reported. Regional Information Reports are available through the Alaska State Library and on the Internet at: http://www.sf.adfg.ak.us/statewide/divreprots/htlm/intersearch.cfm.

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ABSTRACT

This publication estimates the number of fish and the monetary value to the potential harvest value lost to overescapement. Provided below are table representations of this data. Value information is calculated from ADF&G Commercial Operators' Annual Reports, fish tickets and staff estimates.

Key words: escapement, overescapement, sockeye, pink, Chinook, coho, chum, potential harvest

Table 1.– Estimated numbers of sockeye salmon above upper range of the escapement goal and estimated value of unharvested fish.

	2001		2002		2003		2004		2005		2006		2007		
	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	MEG
SOUTHEAST ALASKA															
Hugh Smith Lake					1,568	$8,467	1,734	$8,791	5,800	$34,684	24,530	$151,595	16,000	$90,880	18,000
McDonald Lake															100,000
Mainstem Stikine River	855	$4,540			22,294	$120,388									40,000
Tahltan Lake					19,587	$105,770	28,709	$145,555	12,000	$71,760	23,855	$147,424			30,000
Speel Lake															13,000
Taku River	64,286	$341,359	23,343	$110,879	80,366	$433,976	21,235	$107,661	50,000	$299,000	67,500	$417,150	2,175	$12,354	80,000
Redoubt Lake					44,893	$242,422	52,263	$264,973	39,500	$236,210	76,100	$470,298	42,000	$238,560	25,000
Chilkat Lake															200,000
Chilkoot Lake											6,203	$38,335			90,000
East Alsek-Doame River					10,440	$56,376	7,300	$37,011	24,000	$143,520	3,000	$18,540	14,000	$79,520	26,000
Klukshu River			8,587	$40,788	17,120	$92,448									15,000
Lost River					747	$4,034									2,300
Situk River					19,720	$106,488					20,383	$125,967			70,000
Annual Totals	**65,141**	**$345,899**	**31,930**	**$151,668**	**216,735**	**$1,170,369**	**111,241**	**$563,992**	**131,300**	**$785,174**	**221,571**	**$1,369,309**	**74,175**	**$421,314**	
COPPER RIVER & PWS															
Upper Copper River			56,119	$387,221					89,485	$828,631					500,000
Copper River Delta															130,000
Bering River															35,000
Coghill Lake					35,427	$235,590							30,001	$227,018	40,000
Eshamy Lake	15,187	$103,575	478	$3,298							1,823	$17,264			40,000
Annual Totals	**15,187**	**$103,575**	**56,597**	**$390,519**	**35,427**	**$235,590**			**89,485**	**$828,631**	**1823**	**$17,264**	**30,001**	**$227,018**	
COOK INLET															
English Bay			1,777	$6,273	5,922	$22,148	1,810	$7,747			1,954	$9,829	2,987	$12,286	13,500
Delight Lake			7,005	$24,728					2,650	$14,893			31,413	$129,208	12,550
Desire Lake			800	$2,824							3,400	$17,102			15,200
Bear Lake	306	$1,172	141	$498	1,198	$4,481			1,985	$11,156	38	$191	121	$498	8,300
Aialik Lake							2,100	$8,988							8,000
Mikfik Lake			4,500	$15,885	680	$2,543	1,870	$8,004			5,550	$27,917			12,150
Chenik Lake					4,525	$16,924	7,706	$32,982	5,207	$29,263	4,568	$22,977	8,988	$36,969	9,300
Amakdedori Creek	90	$345	600	$2,118	9,200	$34,408	4,600	$19,688					1,230	$5,059	2,600
Crescent River	8,081	$30,950			52,457	$196,189	33,000	$141,240	55,000	$309,100	22,000	$110,660	9,406	$62,221	70,000
Fish Creek (Knik)i			20,483	$72,305	21,952	$82,100									70,000
Kasilof River	47,000	$180,010			97,000	$362,780	325,000	$1,391,000	96,000	$539,520	116,000	$583,480	86,886	$574,751	250,000
Kenai River							120,000	$513,600	113,000	$635,060	270,000	$1,358,100			1,000,000
Russian River - Early Run	41,255	$158,007	48,943	$172,769			19,582	$83,811	15,903	$89,375	43,524	$218,926			37,000
Russian River - Late Run					47,469	$177,534	244	$1,044							110,000
Yentna River					20,813	$77,841									160,000
Annual Totals	**96,732**	**$370,484**	**84,249**	**$297,399**	**261,216**	**$976,948**	**515,912**	**$2,208,103**	**289,745**	**$1,628,367**	**467,034**	**$2,349,181**	**141,031**	**$820,992**	

-continued-

	2001		2002		2003		2004		2005		2006		2007		
	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	MEG
BRISTOL BAY															
Kvichak River															10,000,000
Naknek River									745,000	$2,920,400			950,000	$3,422,090	2,000,000
Egegik River									222,000	$870,240	65,000	$205,400	30,000	$108,066	1,400,000
Ugashik River													1,270,000	$4,574,794	1,200,000
Wood River							43,000	$124,270			2,508,000	$7,925,280	30,000	$108,066	1,500,000
Igushik River	110,000	$311,300							66,000	$258,720	5,000	$15,800	115,000	$414,253	300,000
Nushagak River	51,000	$144,330							336,000	$1,317,120					760,000
Togiak River	103,000	$291,490			32,000	$103,040					112,000	$353,920	70,000	$252,154	200,000
Annual Totals	**264,000**	**$747,120**			**32,000**	**$103,040**	**43,000**	**$124,270**	**1,369,000**	**$5,366,480**	**2,690,000**	**$8,500,400**	**2,465,000**	**$8,879,423**	
WESTWARD															
Cinder River	12,950	$41,958			76,700	$256,945	43,050	$140,774	84,000	$331,800	40,100	$129,523	130,000	$868,200	12,000
Ilnik River					9,000	$30,150	22,000	$71,940	94,000	$371,300	28,000	$90,440	33,000	$169,620	60,000
Meshik River	80,500	$260,820	27,250	$78,480	74,000	$247,900	62,200	$203,394	76,100	$300,595	94,010	$303,652	38,500	$197,890	20,000
Sandy River					6,000	$20,100			41,000	$161,950					60,000
Bear River Early Run							61,565	$201,318	39,248	$155,030					293,000
Bear River Late Run									26,752	$105,670			29,767	$153,002	195,000
Nelson River			96,689	$278,464	124,511	$417,112	261,097	$853,787	84,000	$331,800					219,000
Christianson Lagoon					2,200	$7,370	25,400	$83,058	4,500	$17,775					50,000
Swanson Lagoon					100	$335	8,300	$27,141							16,000
North Creek			2,100	$6,048	2,200	$7,370	7,000	$22,890	37,000	$146,150			8,800	$45,232	8,000
Orzinski Lake	11,200	$36,288	22,849	$65,805	50,689	$169,808	55,450	$181,322	24,797	$97,948					20,000
Mortensen Lagoon					10,404	$34,853	815	$2,665	15,303	$60,447					6,400
Thin Point Lake	19,900	$64,476	23,000	$66,240	12,000	$40,200	6,500	$21,255							28,000
Middle Lagoon	13,600	$44,064	7,000	$20,160			7,400	$24,198							32,000
Annual Totals	**138,150**	**$447,606**	**178,888**	**$515,197**	**367,804**	**$1,232,143**	**560,777**	**$1,833,741**	**526,700**	**$2,080,465**	**162,110**	**$523,615**	**240,067**	**$1,233,944**	
Chignik River Early Run	344,013	$1,713,185													400,000
Chignik River Late Run	142,905	$711,667	94,519	$475,431	84,119	$270,863					118,996	$624,729	43,884	$219,859	250,000
Annual Totals	**486,918**	**$2,424,852**		**$475,431**	**84,119**	**$270,863**					**118,996**	**$624,729**	**43,884**	**$219,859**	
Malina Creek	12,490	$48,461	22,214	$76,638	2,000	$6,440	10,000	$31,700							10,000
Pauls Bay			1,911	$6,593											30,000
Afognak (Litnik) River															50,000
Karluk River Early Run	128,799	$499,740	246,842	$851,605	241,856	$778,776	183,468	$581,594	58,301	$252,443			69,390	$356,665	210,000
Karluk River Late Run	144,739	$561,587	28,734	$99,132	246,854	$794,870			133,661	$578,752					380,000
Ayakulik River															500,000
Upper Station R Early Run	1,795	$6,965			11,175	$35,984	13,487	$42,754							65,000
Upper Station R Late Run															265,000
Frazer Lake	4,349	$16,874			51,679	$166,406									150,000
Saltery Lake	15,608	$60,559	6,336	$21,859	27,993	$90,137	24,800	$78,616							30,000
Pasagshak River							34,400	$109,048	10,000	$43,300			1,300	$6,682	12,000
Buskin Lake	7,556	$29,317	4,174	$14,400	10,870	$35,001	9,023	$28,603	2,468	$10,686			3,502	$18,000	13,000
Annual Totals	**315,336**	**$1,223,504**	**310,211**	**$1,070,228**	**592,427**	**$1,907,615**	**275,178**	**$872,314**	**204,430**	**$885,182**			**74,192**	**$381,347**	
Westward Annual Totals	**1,565,472**	**$1,671,110**	**762,506**	**$1,585,425**	**1,496,273**	**$3,410,622**	**1,396,732**	**$2,706,055**	**1,257,830**	**$2,965,647**	**562,212**	**$1,148,344**	**358,143**	**$1,835,150**	

Source: Alaska Department of Fish and Game, February 26,2008.

Note: MEG=Maximum Escapement Goal.

Table 2.--Estimated numbers of pink salmon above upper range of the escapement goal and estimated value of unharvested fish.

	2001		2002		2003		2004		2005		2006		2007		MEG
	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	
SOUTHEAST															
Southern Southeast	2,790,043	$1,283,420	917,922	$302,914	1,777,173	$622,011			1,000,000	$420,000			2,100,000	$1,428,000	9,000,000
Northern Southeast Inside					1,209,021	$423,157			800,000	$336,000					5,500,000
Northern Southeast Outside	614,404	$282,626	606,837	$200,256	2,060,033	$721,012	396,329	$142,678	2,050,000	$861,000	150,000	$72,000	550,000	$374,000	1,750,000
Annual Totals	**3,404,447**	**$1,566,046**	**1,524,759**	**$503,170**	**5,046,227**	**$1,766,179**	**396,329**	**$142,678**	**3,850,000**	**$1,617,000**	**150,000**	**$72,000**	**2,650,000**	**$1,802,000**	
PRINCE WILLIAM SOUND															
PWS Pink Salmon					107,289	$38,624			1,919,168	$806,051					2,750,000
Annual Totals					**107,289**	**$38,624**			**1,919,168**	**$806,051**					
LOWER COOK INLET															
Humpy Creek					5,303	$1,220			8,206	$2,872					
China Poot Creek									1,023	$358					
Tutka Creek	2,751	$1,128	14,184	$3,404	29,166	$6,708	16,146	$5,167	131,900	$46,165	24,124	$11,580	3,964	$1,276	85,550
Barabara Creek									5,490	$1,922			16,218	$5,222	8,200
Seldovia Creek							17,813	$5,700	59,652	$20,878	31,095	$14,926	30,455	$9,807	1,700
Port Graham River			38,677	$9,282			24,160	$7,731	49,245	$17,236	11,323	$5,435	5,745	$1,850	8,950
Port Chatham					13,979	$3,215	5,375	$1,720	23,389	$8,186	3,210	$1,541			38,950
Windy Creek Right			3,451	$828	12,391	$2,850	1,024	$328	11,224	$3,928	6,196	$2,974	21,347	$6,874	19,850
Windy Creek Left	31,863	$13,064			52,864	$12,159			42,081	$14,728	35,205	$16,898			21,000
Rocky River	18,701	$7,667	58,277	$13,986	233,193	$53,634			144,421	$50,547	13,590	$6,523	135,742	$43,709	10,950
Port Dick Creek			49,772	$11,945	49,275	$11,333			63,936	$22,378					29,950
Island Creek	53,464	$21,920	15,805	$3,793	90,337	$20,778	5,273	$1,687			79,383	$38,104	58,935	$18,977	54,250
S. Nuka Island Creek	6,404	$2,626	561	$135	27,116	$6,237									58,300
Desire Lake	47,280	$19,385	58,210	$13,970	14,566	$3,350	4,058	$1,299	25,780	$9,023	54,574	$26,196			28,300
Bear & Salmon Creeks									10,952	$3,833					14,250
Thumb Cove															20,200
Humpy Cove									11,386	$3,985					23,500
Tonsina Creek			1,099	$264					4,072	$1,425	603	$289			8,850
Bruin River			1,442,704	$346,249						$0	359,364	$172,495	194,670	$62,684	3,200
Sunday Creek			53,099	$12,744	317,807	$73,096	2,647	$847	87,320	$30,562	41,187	$19,770	365,947	$117,835	5,850
Brown's Peak Creek	366	$150	8,680	$2,083	266,249	$61,237			42,183	$14,764	16,903	$8,113	230,583	$74,248	155,750
Annual Totals	**160,829**	**$65,940**	**1,744,519**	**$418,685**	**1,112,246**	**$255,817**	**76,496**	**$24,479**	**722,260**	**$252,791**	**676,757**	**$324,843**	**1,063,606**	**$342,482**	28,850
WESTWARD REGION															18,800
Bechevin Bay Section	4,500	$1,800					53,300		7,120		85,075	$26,373	12,800	$6,528	Odd yr 1,600 Even yr 31,000
South Peninsula Total			33,500	$9,715	2,235,520	$603,590	4,582,110	$1,374,633	2,889,934	$1,011,477					Odd yr 3,275,700 Even yr 3,729,300
Entire Chignik Area	1,186,500	$474,600	291,053	$84,405	1,168,617	$315,527	377,860	$113,358	414,850	$145,198			60,000	$30,600	Odd yr 1,177,000 Even yr 737,000
Kodiak Archipelago											86,372	$18,138			5,000,000
Mainland District			151,925	$44,058	258,550	$69,809					28,200	$5,922			750,000
Annual Totals	**1,191,000**	**$476,400**	**476,478**	**$138,179**	**3,662,687**	**$988,925**	**5,013,270**	**$1,503,981**	**3,311,904**	**$1,159,166**	**199,647**	**$41,926**	**72,800**	**$37,128**	

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Table 2. Page 2 of 2.

	2001		2002		2003		2004		2005		2006		2007		MEG
	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	
AYK REGION[a]															
Norton Sound															
Subdistrict 1															
Nome River					8,252	$2,641			282,609	$115,870			21,245	$8,286	Odd yr 3,150
			22,057	$7,499			1,038,146	$373,733			565,555	$107,455			Even yr 13,000
Subdistrict 2,3							3,046,284	$1,096,662							
Kwiniuk River			1,106,010	$376,043	13,929	$4,457	1,011,736	$364,225	332,648	$136,386	1,338,687	$254,351	45,855	$17,883	8,400
Niukluk River			625,904	$212,807	65,355	$20,914			259,924	$106,569	1,361,419	$258,670	33,117	$12,916	10,500
Subdistrict 4,5,6							1,124,294	$404,746							
North River			296,756	$100,897	255,212	$81,668			1,645,934	$674,833	2,144,890	$407,529	558,320	$217,745	25,000
Annual Totals			2,050,727	$697,247	342,748	$109,679	6,220,460	$2,239,366	2,521,115	$1,033,657	5,410,551	$1,028,005	658,537	$256,829	

Source: Alaska Department of Fish and Game, February 26, 2008. Page 1 of 2.

Note: MEG=Maximum Escapement Goal.

[a] No pink salmon were purchased between 2002-2006.

Statewide prices used to calculate potential unrealized value.

Table 3.–Estimated numbers of AYK Chinook, coho, and chum salmon above upper range of the escapement goal and estimated value of unharvested fish.

	2002		2003		2004		2005		2006		2007		MEG
	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	
AYK CHINOOK SALMON													
Kuskokwim Bay													
N.F. Goodnews R.			635	$8,249	4,162	$147,168			859	$26,217			3,300
M.F. Goodnews R.	185	$6,061			1,448	$51,201	1,629	$54,539	1,659	$50,633	952	$35,414	2,900
Kanektok R.					20,375	$720,460	5,926	$198,402	433	$13,215			8,000
Annual Totals	**185**	**$6,061**	**635**	**$8,249**	**25,985**	**$918,830**	**7,555**	**$252,941**	**2,951**	**$90,065**	**952**	**$35,414**	
Kuskokwim River													
Kogrukluk R.					5,651	$199,819	7,993	$267,606	5,414	$165,235			14,000
Kwethluk R.			3,474	$45,127	17,605	$622,513			3,224	$98,396	2,267	$84,332	11,000
Tuluksak R.							553	$18,514					2,100
George R.													7,900
Kisaralik R.	1,085	$35,545			5,713	$202,012	2,912	$97,494	3,534	$107,858	173	$6,436	1,200
Aniak R.			1,214	$15,770	3,269	$115,592			3,339	$101,906	1,684	$62,645	2,300
Salmon R. (Aniak R. tributary)	36	$1,179	92	$1,195	977	$34,547	2,897	$96,992			258	$9,598	1,200
Holitna R.					2,742	$34,547	695	$23,269	1,824	$55,668			2,100
Cheeneetnuk R. (Stony R. tributary)													1,300
Gagaryah (Stony R. Tributary)			263	$3,416							205	$7,626	830
Salmon R. (Pitka Fork R. tributary)							209	$6,997					1,600
Annual Totals	**1,491**	**$48,845**	**6,313**	**$82,006**	**87,926**	**$3,046,688**	**30,369**	**$1,016,754**	**23,237**	**$709,193**	**6,490**	**$241,465**	
Norton Sound													
Subdistrict 2,3													
Fish/Boston River (aerial survey)													250
Subdistrict 4,5,6													
Kwiniuk River (tower)	228	$7,469	194	$2,520	113	$3,996							550
North River (tower)													2,600
Shaktoolik (aerial survey)													800
Unalakleet/Old Woman River													1,100
Annual Totals	**228**	**$7,469**	**194**	**$2,520**	**113**	**$3,996**							
Yukon River													
E.F. Andreafsky R. (aerial survey)					979	$34,617							1,900
W.F. Andreafsky R. (aerial survey)							115	$3,850			158	$5,878	1,600
Anvik R. (aerial survey)	13	$426			1,981	$70,048	721	$24,139	186	$5,677			
Nulato R. (aerial survey)											683	$25,408	1,900
Gisasa R. (aerial survey)													1,100
Chena R. (tower)	1,267	$41,507	7,300	$94,827	3,945	$127,660							5,700
Salcha R. (tower)	2,400	$78,624	9,000	$116,910	9,261	$327,469			4,179	$127,452			6,500
Canada Mainstem (mark/recapture)	12,145	$397,870	19,486	$253,123	9,165	$324,074	3,565	$119,356					> 28,000
Annual Totals	**15,825**	**$518,427**	**35,786**	**$464,860**	**25,331**	**$883,869**	**4,401**	**$147,345**	**4,365**	**$133,128**	**841**	**$31,285**	
AYK CHINOOK ANNUAL TOTALS	**17,728**	**$580,802**	**42,928**	**$557,635**	**139,355**	**$4,853,383**	**42,325**	**$1,417,041**	**30,553**	**$932,386**	**8,283**	**$308,165**	

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Table 3. Page 2 of 3.

	2002		2003		2004		2005		2006		2007		
	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	MEG
AYK COHO SALMON													
Kuskokwim Bay													
M.F. Goodnews River	15,364	$25,351	40,810	$80,804	35,916	$78,297	3,683	$7,623	3,969	$8,731	8,975	$29,708	12,000
Annual Totals	**15,364**	**$25,351**	**40,810**	**$80,804**	**35,916**	**$78,297**	**3,683**	**$7,623**	**3,969**	**$8,731**	**8,975**	**$29,708**	
Kuskokwim River													
Kogrukluk River			46,604	$92,275									28,000
Annual Totals			**46,604**	**$ 92,275**									
Norton Sound													
Subdistrict 2,3													
Kwiniuk River											3,874	$12,823	1,300
Niukluk River	1,491	$2,460							5,269	$11,592			5,900
Subdistrict 4,5,6													
North River							863				1,249	$4,134	1,100
Annual Totals	**1,491**	**$2,460**					**863**		**5,269**	**$11,592**	**5,123**	**$16,957**	
Yukon River													
Delta Clearwater River	22,000	$36,300	89,000	$176,220	21,000		17,000				2,000	$6,620	17,000
Annual Totals	22,000	$36,300	89,000	$176,220	21,000		17,000				**2,000**	**$6,620**	
AYK COHO ANNUAL TOTALS	38,855	$64,111	176,414	$349,299	56,916	$78,297	**21,546**	**$7,623**	**9,238**	**$20,323**	**16,098**	**$53,285**	
AYK CHUM SALMON													
Kuskokwim Bay													
M.F. Goodnews River	18,300	$53,620	9,637	$6,939			14,690	$19,391	42,699	$42,272	37,285	$49,216	12,000
Kanektok River													5,200
Annual Totals	**18,300**	**$53,620**	9,637	**$6,939**			**14,690**	**$19,391**	**42,699**	**$42,272**	**37,285**	**$49,216**	
Kuskokwim River													
Kogrukluk R. Weir	2,570	$7,529					148,707	$196,294	131,597	$130,281	505	$667	49,000
Aniak Sonar					192,931	$169,779	671,505	$886,387	628,626	$622,340	216,801	$286,177	480,000
Annual Totals	**2,570**	**$7,529**			192,931	$169,779	820,212	$1,082,680	760,223	$752,621	217,306	$286,844	
Kotzebue Sound													
Kotzebue Sound													
Noatak and Eli Rivers													91,000
Upper Kobuk w/ Selby River					5,018	$4,416			27,750	$27,473			21,000
Salmon River													7,200
Tutuksuk													3,000
Squirrel													10,500
Annual Totals					5,018	$4,416			27,750	$27,473			

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Table 3. Page 3 of 3.

	2002		2003		2004		2005		2006		2007		
	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	No. Fish	Value	MEG
AYK CHUM SALMON (continued)													
Norton Sound													
Subdistrict 1													
Subdistrict 1 Aggregate							3,808	$5,027	52,223	$51,701	41,937	$55,357	35,000
Sinuk River	133	$390									10,281	$13,571	6,200
Nome River							1,284	$1,695	1,378	$1,364	2,734	$3,609	4,300
Bonanza River							2,134	$2,817			5,091	$6,720	3,400
Snake River	276	$809					448	$591	1,628	$1,612	5,644	$7,450	2,500
Solomon River	550	$1,612					314	$414	462	$457	1,869	$2,467	1,600
Flambeau River	504	$1,477			1,367	$1,203	1,392	$1,837	21,528	$21,313	5,706	$7,532	6,300
Eldorado River	1,043	$3,056					1,226	$1,618	32,785	$32,457	12,112	$15,988	9,200
Subdistrict 2,3													
Niukluk River	5,307	$15,550									20,994	$27,712	30,000
Kwiniuk River	14,995	$43,935							16,519	$16,354	4,756	$6,278	23,000
Tubutuluk River													18,400
Subdistrict 4,5,6													
Unalakleet/Old Woman River													4,800
Annual Totals	**22,808**	**$66,827**			**1,367**	**$1,203**	**10,606**	**$14,000**	**126,523**	**$125,258**	**111,124**	**$146,684**	
Yukon River Summer Run													
E.F. Andreafsky R. (weir count)													130,000
Anvik R. (sonar estimate)									292,378	$289,454			700,000
Pilot Station Sonar (Sonar estimate)	85,240	$249,753	164,057	$118,121	351,191	$309,048	1,430,630	$1,888,432	2,722,403	$2,695,179	639,749	$844,469	1,000,000
Annual Totals	**85,240**	**$249,753**	**164,057**	**$118,121**	**351,191**	**$309,048**	**1,430,630**	**$1,888,432**	**3,014,781**	**$2,984,633**	**639,749**	**$844,469**	
Yukon River Fall Run													
Yukon River Drainage (foot surveys, mark/recapture, and sonar estimates)			78,000	$56,160			1,313,000	$1,733,160	236,000	$233,640	306,000	$403,920	600,000
Tanana River	2,000	$5,860	94,000	$67,680			283,000	$373,560	87,000	$86,130	223,000	$294,360	136,000
Delta River			10,000	$7,200	12,000	$10,560	15,000	$19,800	1,055	$1,044	6,000	$7,920	13,000
Toklat River					2,000	$1,760							33,000
Upper Yukon R. Trib							744,000	$982,080	124,000	$122,760	15,000	$19,800	312,000
Chandalar River			62,000	$44,640			345,000	$455,400	93,000	$92,070	76,000	$100,320	152,000
Sheenjek River							334,000	$440,880	56,000	$55,440			104,000
Fishing Branch River (Canada)			15,000	$10,800	7,000	$6,160	97,000	$128,040	2,000	$1,980	333	$440	120,000
Yukon R. Mainstem (Canada)	31,000	$90,830	59,000	$42,480	66,000	$58,080	248,000	$327,360	88,000	$87,120	96,000	$126,720	80,000
Annual Totals	**33,000**	**$96,690**	**318,000**	**$228,960**	**87,000**	**$76,560**	**3,379,000**	**$4,460,280**	**687,055**	**$680,184**	**722,333**	**$953,480**	
AYK CHUM ANNUAL TOTALS	**161,918**	**$474,419**	**491,694**	**$354,020**	**637,507**	**$561,006**	**5,655,138**	**$7,464,782**	**4,659,031**	**$4,612,441**	**1,727,797**	**$2,280,692**	

Source: Alaska Department of Fish and Game, February 26, 2008

Regional Information Report No. 5J08-02

Potential Unrealized Harvest and Exvessel Value—Prepared at the request of the House Fisheries Committee

by

Geron Bruce

February 2008

Alaska Department of Fish and Game **Division of Commercial Fisheries**



Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, Special Publications and the Division of Commercial Fisheries Regional Reports. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

Weights and measures (metric)	
centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm
Weights and measures (English)	
cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd
Time and temperature	
day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s
Physics and chemistry	
all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General	
Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)	
fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL
Mathematics, statistics	
all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

REGIONAL INFORMANTION REPORT NO. 5J08-02

POTENTIAL UNREALIZED HARVEST AND EXVESSEL VALUE—PREPARED AT THE REQUEST OF THE HOUSE FISHERIES COMMITTEE

By
Geron Bruce
Alaska Department of Fish and Game, Division of Commercial Fisheries

Alaska Department of Fish and Game
Division of Commercial Fisheries
Juneau, Alaska

February 2008

The Regional Information Report Series was established in 1987 and was redefined in 2006 to meet the Division of Commercial Fisheries regional need for publishing and archiving information such as project operational plans, area management plans, budgetary information, staff comments and opinions to Board of Fisheries proposals, interim or preliminary data and grant agency reports, special meeting or minor workshop results and other regional information not generally reported elsewhere. Reports in this series may contain raw data and preliminary results. Reports in this series receive varying degrees of regional, biometric and editorial review; information in this series may be subsequently finalized and published in a different department reporting series or in the formal literature. Please contact the author or the Division of Commercial Fisheries if in doubt of the level of review or preliminary nature of the data reported. Regional Information Reports are available through the Alaska State Library and on the Internet at: http://www.sf.adfg.ak.us/statewide/divreprots/htlm/intersearch.cfm.

Geron Bruce,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
1255 W. 8th St. P.O. Box 115526, Juneau, AK 99811-5526, USA

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Office of Equal Opportunity, U.S. Department of the Interior, Washington DC 20240

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For information on alternative formats and questions on this publication, please contact:

ADF&G, Division of Commercial Fisheries, P.O. Box 115526, Juneau AK 99811 (907)465-4210.

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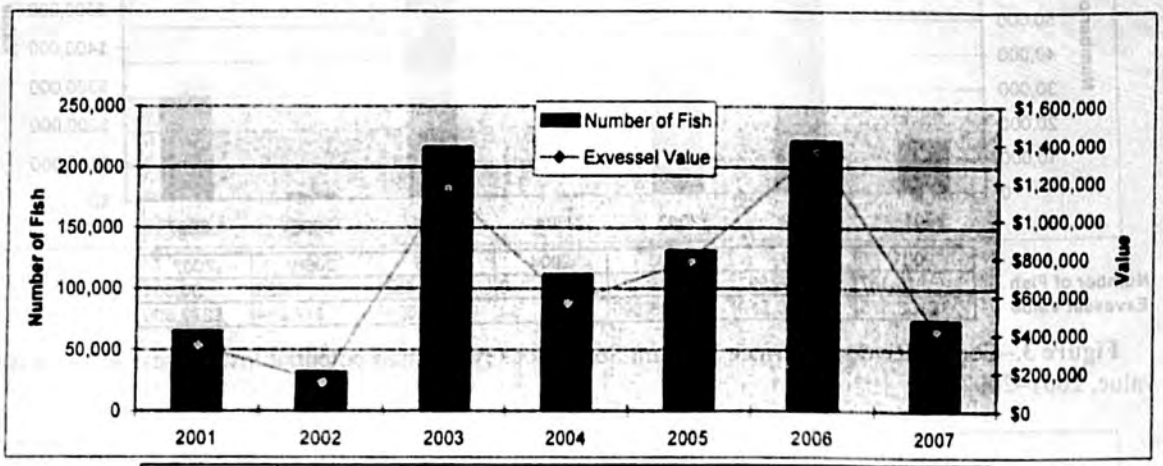
ABSTRACT

This publication estimates the monetary value to the potential harvest value lost to overescapement. Provided below are figure and table representations of this data. Value information is calculated from ADF&G Commercial Operators' Annual Reports, fish tickets and staff estimates.

Key words: escapement, overescapement, exvessel value, sockeye, pink, Chinook, coho, chum, potential harvest

REGION 1: SOUTHEAST REGION

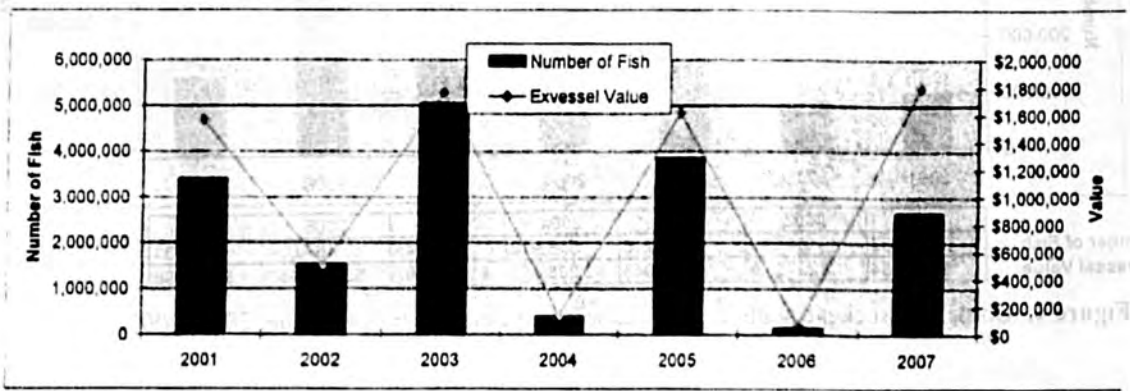
SOCKEYE SALMON



	2001	2002	2003	2004	2005	2006	2007
Number of Fish	65,141	31,930	216,735	111,241	131,300	221,571	74,175
Exvessel Value	$345,899	$151,668	$1,170,369	$563,992	$785,174	$1,369,309	$421,314

Figure 1.–Southeast sockeye salmon potential lost harvest and exvessel value, 2001–2007.

PINK SALMON

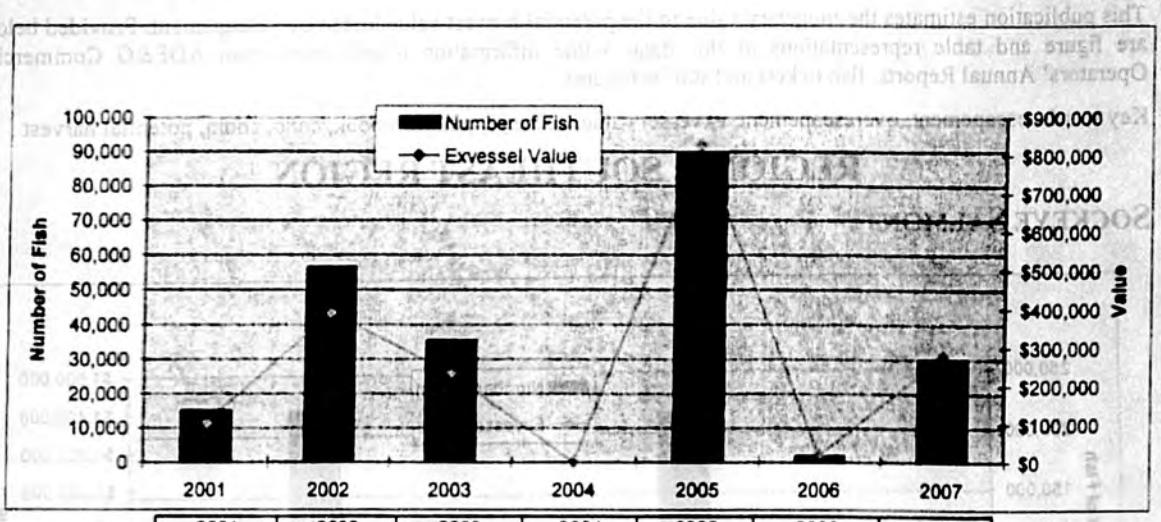


	2001	2002	2003	2004	2005	2006	2007
Number of Fish	3,404,447	1,524,759	5,046,227	396,329	3,850,000	150,000	2,650,000
Exvessel Value	$1,566,046	$503,170	$1,766,179	$142,678	$1,617,000	$72,000	$1,802,000

Figure 2.–Southeast pink salmon potential lost harvest and exvessel value, 2001–2007.

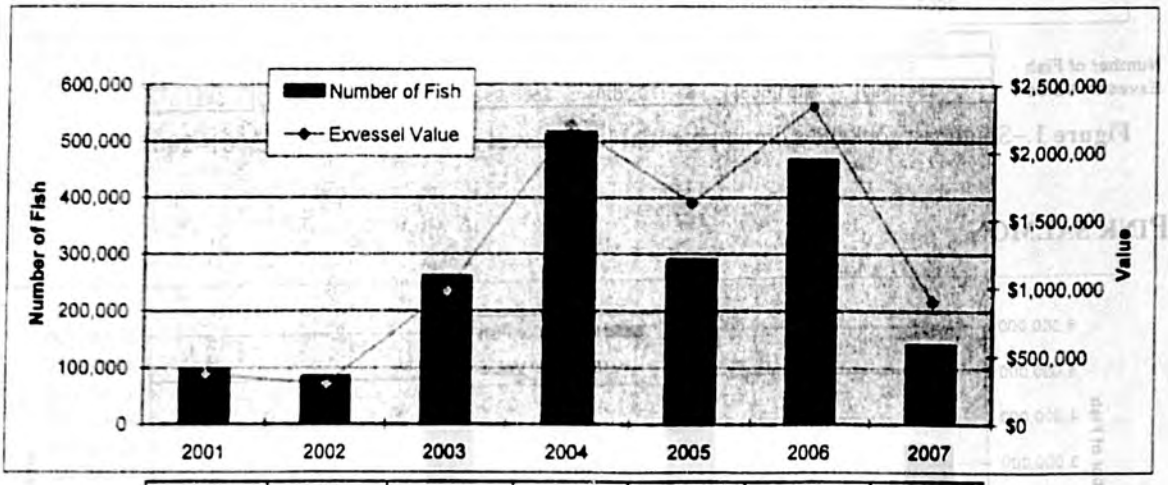
REGION 2: CENTRAL REGION

SOCKEYE SALMON



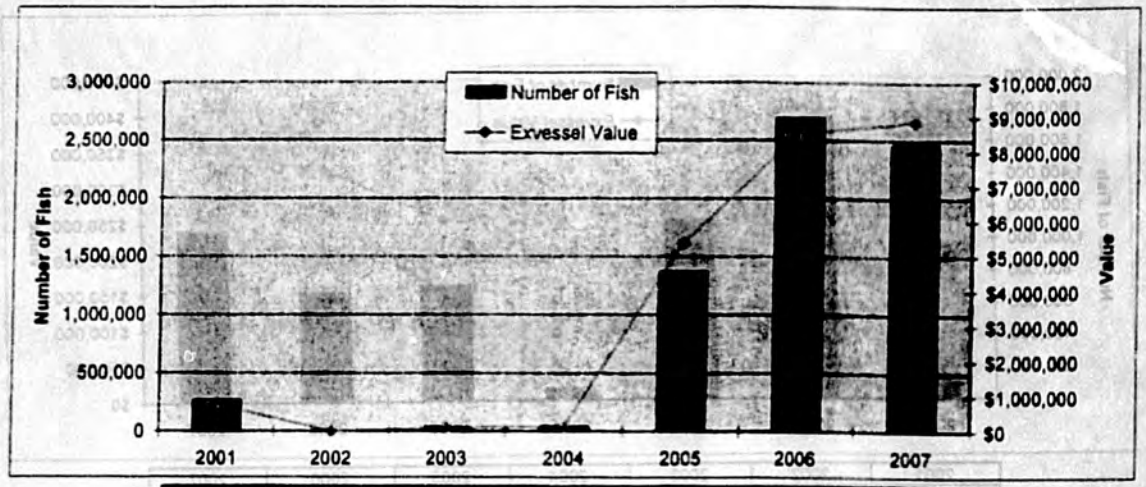
	2001	2002	2003	2004	2005	2006	2007
Number of Fish	15,187	56,597	35,427	0	89,485	1,823	30,001
Exvessel Value	$103,575	$390,519	$235,590	$0	$828,631	$17,264	$277,809

Figure 3.–Copper River and Prince William Sound sockeye salmon potential lost harvest and exvessel value, 2001–2007.



	2001	2002	2003	2004	2005	2006	2007
Number of Fish	96,732	84,249	261,216	515,912	289,745	467,034	141,031
Exvessel Value	$370,484	$297,399	$976,948	$2,208,103	$1,628,367	$2,349,181	$902,598

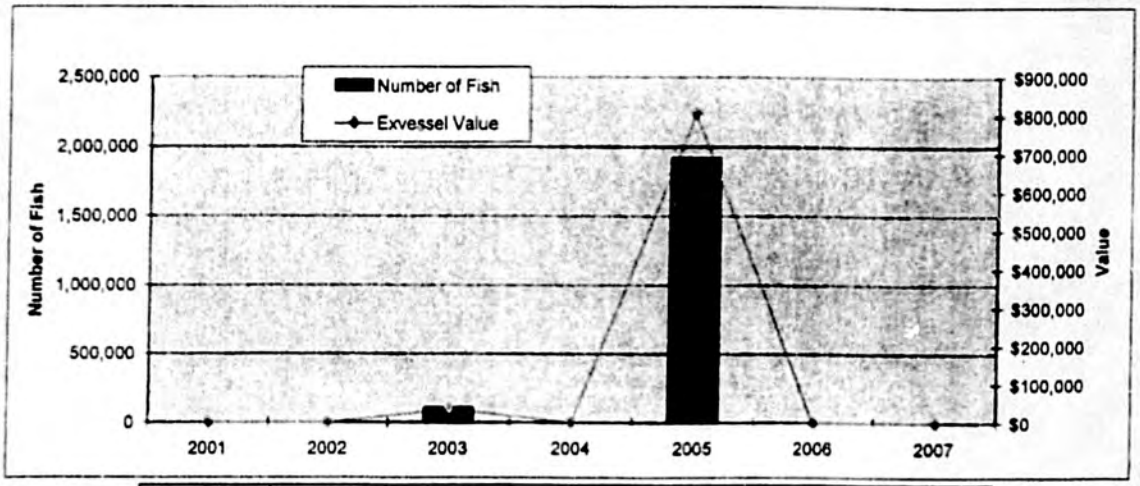
Figure 4.–Cook Inlet sockeye salmon potential lost harvest and exvessel value, 2001–2007.



	2001	2002	2003	2004	2005	2006	2007
Number of Fish	264,000	0	32,000	43,000	1,369,000	2,690,000	2,465,000
Exvessel Value	$747,120	$0	$103,040	$124,270	$5,366,460	$8,500,400	$8,874,000

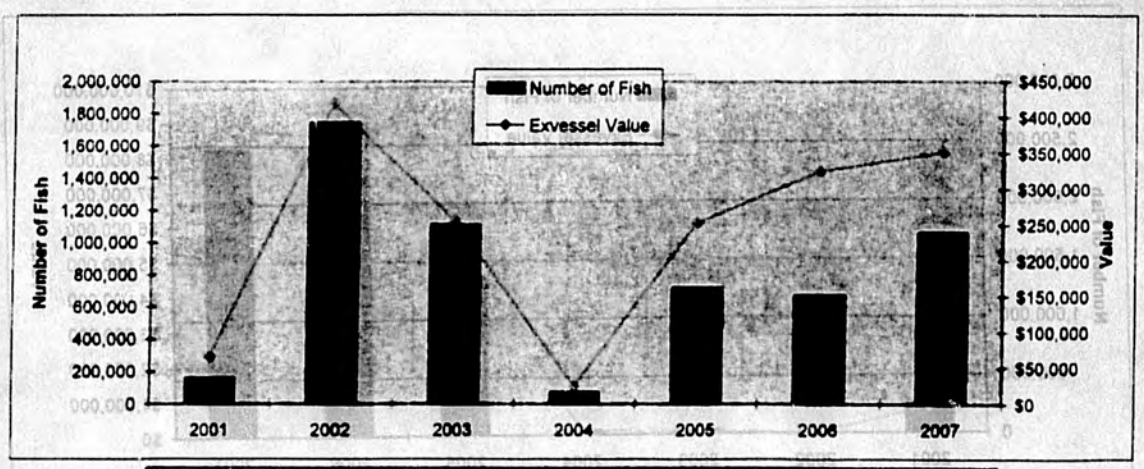
Figure 5.–Bristol Bay sockeye salmon potential lost harvest and exvessel value, 2001–2007.

PINK SALMON



	2001	2002	2003	2004	2005	2006	2007
Number of Fish	0	0	107,289	0	1,919,168	0	0
Exvessel Value	$0	$0	$35,624	$0	$806,051	$0	$0

Figure 6.–Prince William Sound pink salmon potential lost harvest and exvessel value, 2001–2007.

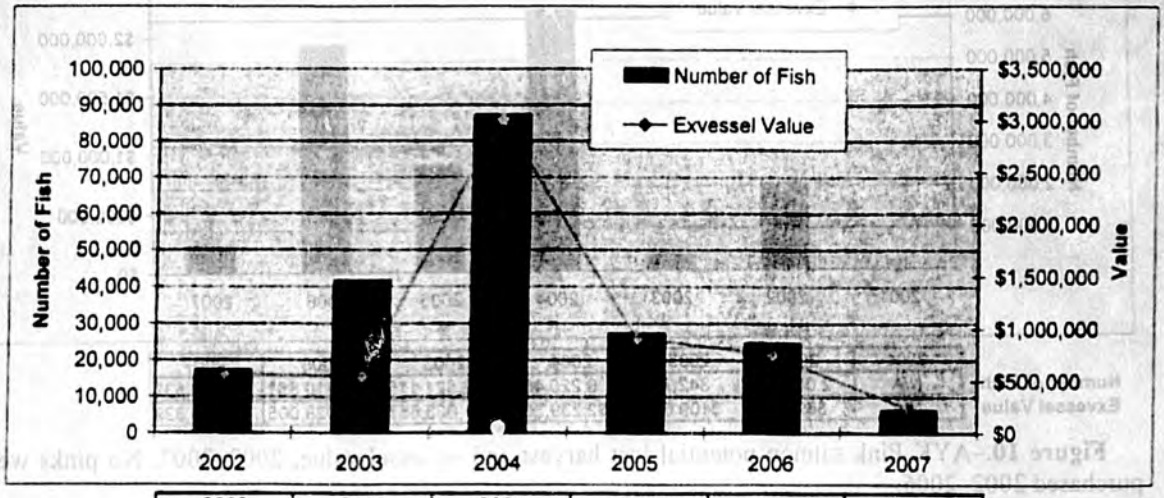


	2001	2002	2003	2004	2005	2006	2007
Number of Fish	160,829	1,744,519	1,112,246	76,496	722,260	676,757	1,063,606
Exvessel Value	$65,940	$418,685	$255,817	$24,479	$252,791	$324,843	$350,990

Figure 7.–Lower Cook Inlet pink salmon potential lost harvest and exvessel value, 2001–2007.

REGION 3: AYK REGION

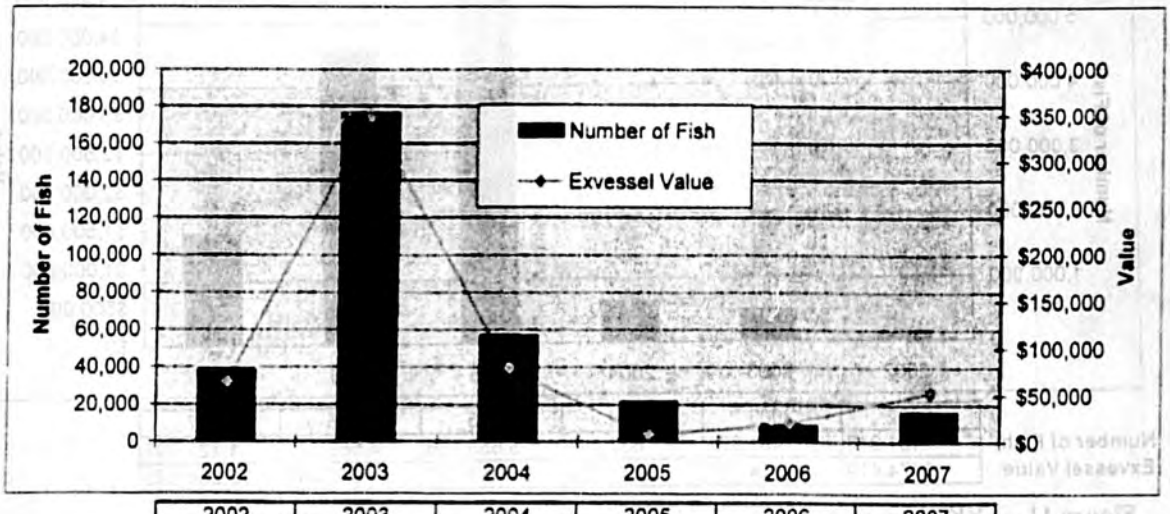
CHINOOK SALMON



	2002	2003	2004	2005	2006	2007
Number of Fish	17,359	41,658	87,385	27,215	24,651	6,380
Exvessel Value	$568,681	$541,137	$3,015,724	$911,158	$752,257	$237,336

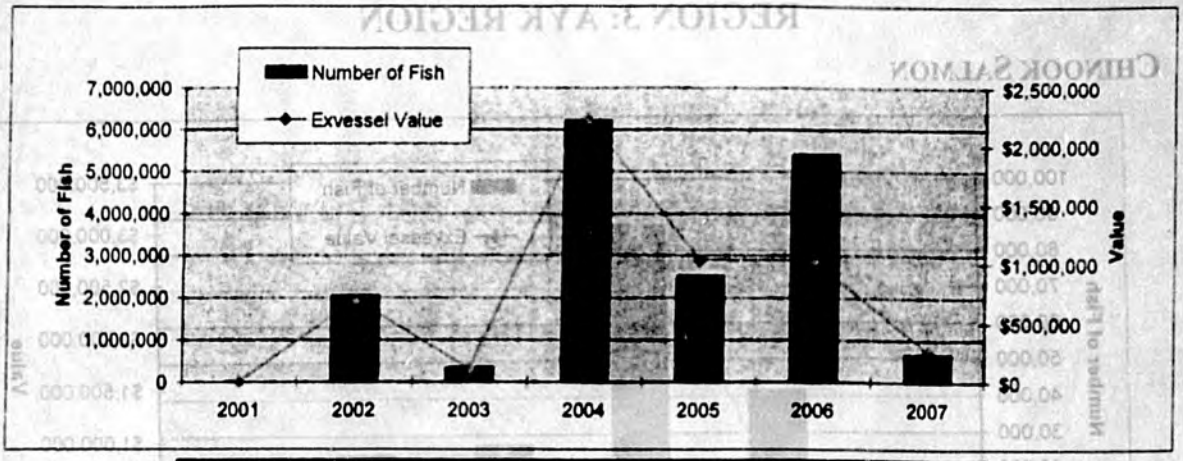
Figure 8.–AYK Chinook salmon potential lost harvest and exvessel value, 2002–2007.

COHO SALMON



	2002	2003	2004	2005	2006	2007
Number of Fish	38,855	176,414	56,916	21,546	9,238	16,098
Exvessel Value	$64,111	$349,299	$78,297	$7,623	$20,323	$53,286

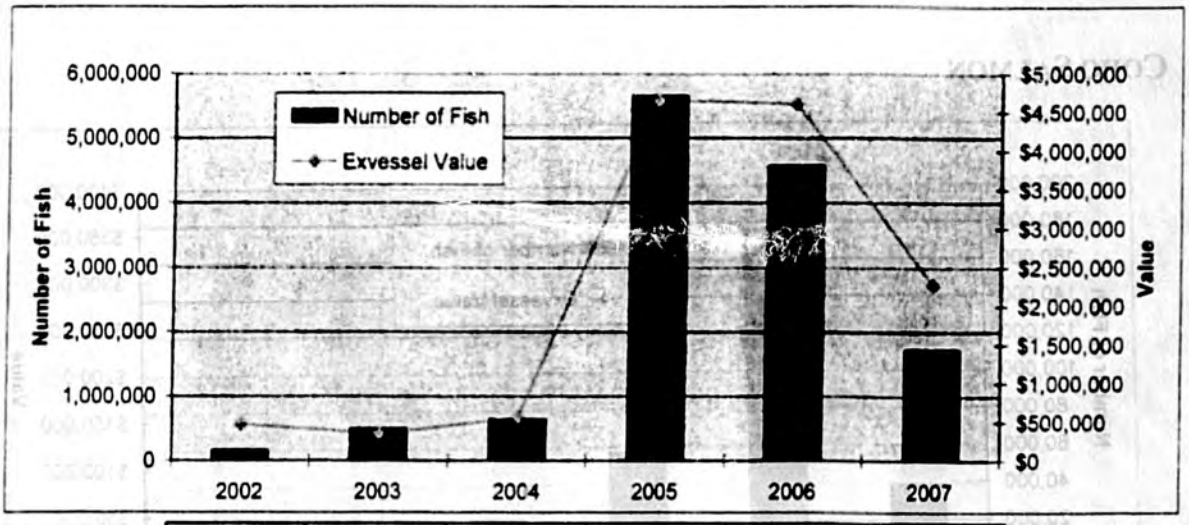
Figure 9.–AYK coho salmon potential lost harvest and exvessel value, 2002–2007.



	2001	2002	2003	2004	2005	2006	2007
Number of Fish	N/A	2,050,727	342,748	6,220,460	2,521,115	5,410,551	658,537
Exvessel Value	N/A	$697,247	$109,679	$2,239,366	$1,033,657	$1,028,005	$256,829

Figure 10.–AYK Pink salmon potential lost harvest and exvessel value, 2002–2007. No pinks were purchased 2002–2006.

CHUM SALMON

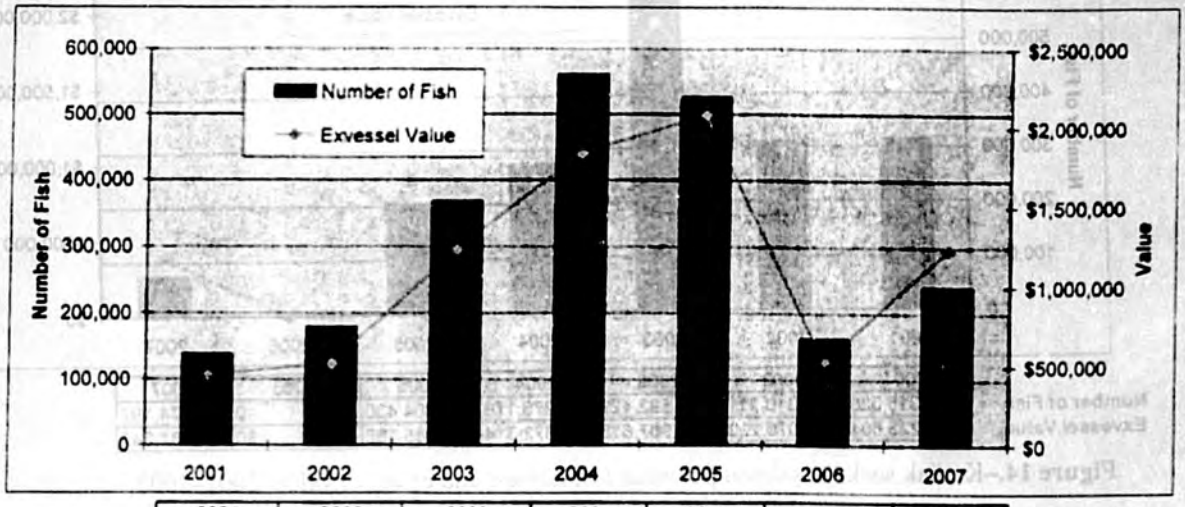


	2002	2003	2004	2005	2006	2007
Number of Fish	161,918	491,694	637,507	5,655,138	4,569,031	1,727,797
Exvessel Value	$474,419	$354,020	$561,006	$4,659,031	$4,612,441	$2,280,692

Figure 11.–AYK chum salmon potential lost harvest and exvessel value, 2001–2007.

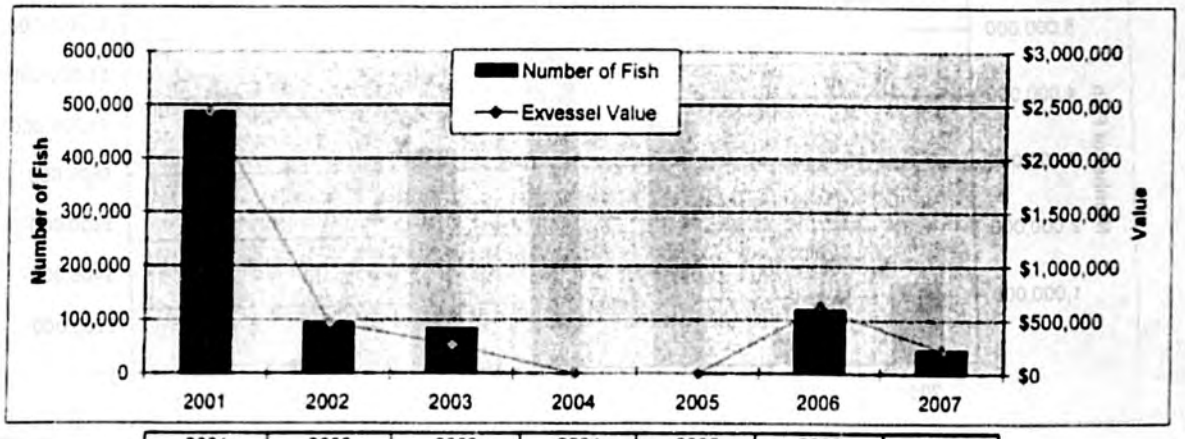
REGION 4: WESTWARD REGION

SOCKEYE SALMON



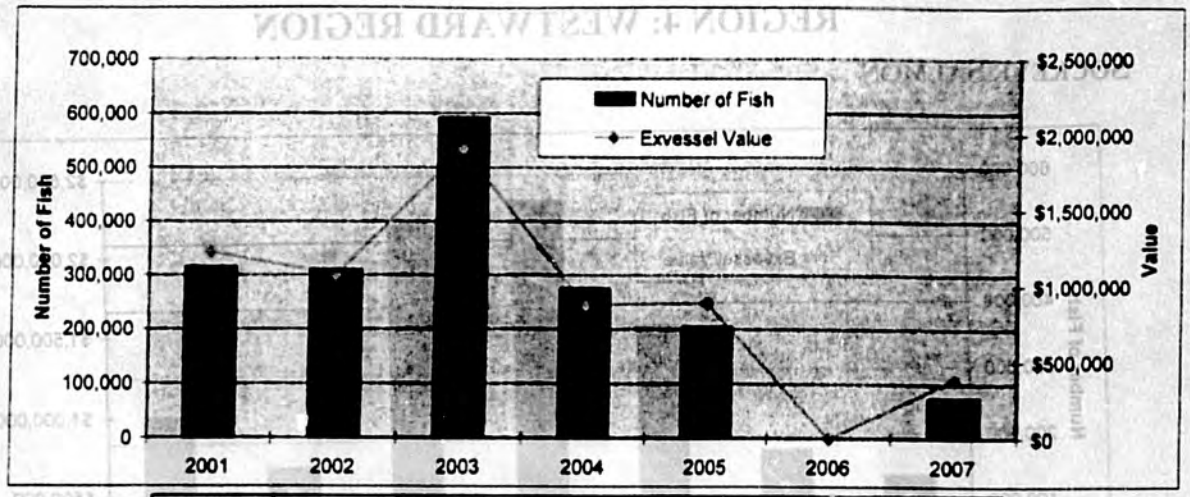
	2001	2002	2003	2004	2005	2006	2007
Number of Fish	138,150	178,888	367,804	560,777	526,700	162,110	240,067
Exvessel Value	$447,606	$515,197	$1,232,143	$1,833,741	$2,080,465	$532,614	$1,233,944

Figure 12.–Alaska Peninsula sockeye salmon potential lost harvest and exvessel value, 2001–2007.



	2001	2002	2003	2004	2005	2006	2007
Number of Fish	486,918	94,519	84,119	0	0	118,996	43,884
Exvessel Value	$2,424,652	$475,431	$270,863	$0	$0	$624,729	$219,859

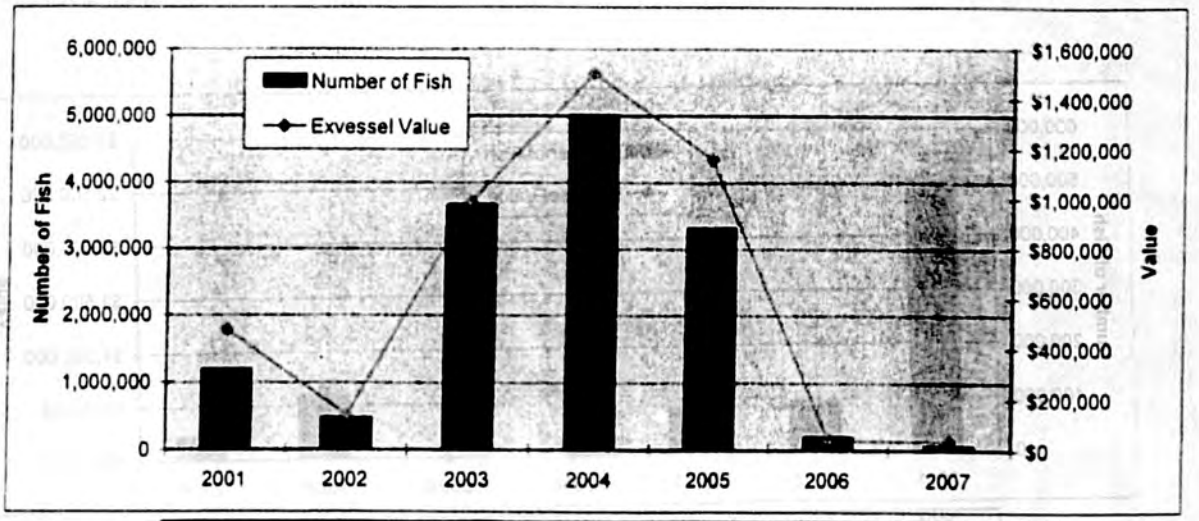
Figure 13.–Chignik sockeye salmon potential lost harvest and exvessel value, 2001–2007.



	2001	2002	2003	2004	2005	2006	2007
Number of Fish	315,336	310,211	592,427	275,178	204,430	0	74,192
Exvessel Value	$1,223,504	$1,070,228	$1,907,615	$872,314	$885,182	$0	$381,347

Figure 14.–Kodiak sockeye salmon potential lost harvest and exvessel value, 2001–2007.

PINK SALMON



	2001	2002	2003	2004	2005	2006	2007
Number of Fish	1,191,000	476,478	3,662,687	5,013,270	3,311,904	199,647	72,800
Exvessel Value	$476,400	$138,179	$988,925	$1,503,981	$1,159,166	$41,926	$37,128

Figure 15.–Westward Region pink salmon potential lost harvest and exvessel value, 2001–2007.

Let's call the meeting to order

Let the record reflect that it is 8:30 a.m. on Wednesday, April 9th, 2008

Present are:

✓ Representative Johnson

Representative LeDoux

Representative Wilson

✓ Representative Johansen

Representative Holmes

Representative Edgmon

✓ And myself, Representative Seaton

At this time I would like to remind everyone to turn off their cell phones and address questions through the chair.

Today we will also continue our round table discussion on foregone harvest through over-escapement, this meeting will focus on the Arctic, Yukon, and Kuskokwim regions.

Let's call the meeting to order

Let the record reflect that it is 8:30 a.m. on Wednesday, March 26th, 2008

Present are:

Representative Johnson

Representative LeDoux

Representative Wilson

Representative Johansen

Representative Holmes

Representative Edgmon

And myself, Representative Seaton

At this time I would like to remind everyone to turn off their cell phones and address questions through the chair.

Today we will continue our round table discussion on foregone harvest through overescapement, this meeting will focus on Bristol Bay and the Westward region.

Here to participate in the discussion are:

Robert Heyano, President, Bristol Bay Regional Seafood Development Association (BB-RSDA)

Chris McDowell, Vice President, Bristol Bay Regional Seafood Development Association

Bob Waldrop, Executive Director, Bristol Bay Regional Seafood Development Association

Kristin Ryan, Director, Division of Environmental Health, Department of Environmental Conservation (Will be here at 9:20) – if questions about small processor regulation arise

Kris Noroscz - Icicle Seafoods

On line:

John Hilsinger, Director, ADF&G Comm Fish Division

Jim McCullough, ADF&G Westward Regional Supervisor

Jeff Regnart, ADF&G Bristol Bay Regional Supervisor

For questions

Dave Sterritt, ADF&G Westward Regional Management Finfish Supervisor

Steve Honnold, ADF&G Westward Regional Management Research Coordinator

Bob Murphy, ADF&G North Alaska Peninsula Area Management Biologist

Aaron Potter, ADF&G South Alaska Peninsula Area Management Biologist

Mark Stickert, ADF&G Chignik Area Management Biologist

Joe Dinnocezo, ADF&G Kodiak Area Assistant Biologist

Dan Gray, ADF&G Bristol Bay Regional Management Supervisor

Paul Salamone, ADF&G Egegik/Ugashik Area Management Biologist

Tim Sands, ADF&G Nushagak/Togiak Area Management Biologist

Slim Marstead, ADF&G Naknek/Kvichak Area Management Biologist

David Harsila, President, Alaska Independent Fishermen's Alliance

Fred Pike, Vice President, Alaska Independent Fishermen's Marketing Alliance

Mary Mcdowell, Pacific Seafood Processors Association – Here for questions

~~**Kris Norosz, Icicle Seafoods**~~

Robin Samuelson – Bristol Bay Economic Development Corp.

ADF&G Participants in Wednesday's meeting will be:

John Hilsinger, Director, Commercial Fisheries Division

Gene Sandone, Arctic-Yukon-Kuskokwim Regional Supervisor

Dan Bergstrom, Arctic-Yukon-Kuskokwim Regional Management Coordinator

Fred Bue, Yukon River Management Biologist for the Fall Season (fall chum and coho salmon)

Dani Evenson, Yukon River Research Biologist for the Summer Season (Chinook and summer chum salmon)

Kuskokwim Area and Norton Sound/Port Clarence staffs are not available at this time.

Earlier fishing

Jeff Regnart.

in district
gen dist
expanded

Jim McCullough.

Robert Heyano

Bob Waldrop. RSDA
Large forecast.

Louie Flora

From: D K [ata@gci.net]
Sent: Friday, March 14, 2008 7:35 AM
To: Louie Flora
Subject: Re: RE: foregone harvest chart

Hi Louie:

Looks to me like this is mostly a gillnet issue in Southeast, so I'll let them provide guidance on the matter and wait to see the findings before weighing in (if at all). As always, to harvest one species often means impacts on species of concern to another group, so that's mostly what I'd be watching for. That said, searching out extra opportunity for the fleets is always a good thing.

Thanks for making contact - and sorry to be so distant again this year. Treaty is the dominant issue in ATA land right now.

Hi to Paul...

Take care,

Dale

----- Original Message -----
From: Louie Flora <Louie_Flora@legis.state.ak.us>
Date: Thursday, March 13, 2008 10:49 am
Subject: RE: foregone harvest chart
To: D K <ata@gci.net>

> Hi Dale,
>
> thanks for getting back on this. Rep. Seaton has asked me to
> contact fishing groups in each region (SE, SCentral, and Western)
> to see if they have any suggestions on changes to statute that may
> be necessary in order for fishermen to capture the foregone
> harvest as detailed in the attached value chart.
>
> Please analyze the figures and let me know if your group has any
> interest in discussing overescapement in SE, and in general any
> legislative fix that will allow fishermen to increase their
> harvest and the value of their harvest.
>
> Thanks,
>
> Louie Flora,
> House Fisheries Committee Aide,
> Representative Seaton
>
>

>
>
>
> _____
> From: D K [mailto:ata@gci.net]
> Sent: Thursday, March 13, 2008 8:53 AM
> To: Louie Flora
> Subject: Re: foregone harvest chart
>
>
> Hi Louie:
>
> I'm at Pacific Salmon Treaty negotiations right now, but got your
> message. What kind of round table are you putting together? And,
> what's the timeframe?
>
> I have reliable internet coverage here in the meeting room, but
> not so good ability to call out right now. So, if you can fill me
> in this way to start, that would be appreciated and likely more
> efficient.
> Thanks!
>
> Dale Kelley, ATA
>
> ----- Original Message -----
> From: Louie Flora <Louie_Flora@legis.state.ak.us>
> Date: Wednesday, March 12, 2008 4:16 pm
> Subject: foregone harvest chart
> To: "lhsclaf+housefisheries@legis.state.ak.us"
> <lhsclaf+housefisheries@legis.state.ak.us>, "lhsclaf+fishlist@legis.state.ak.us"
<lhsclaf+fishlist@legis.state.ak.us>, "lhsclaf+liolist@legis.state.ak.us"
<lhsclaf+liolist@legis.state.ak.us>
>
> > During the House Fisheries overview on ADF&G Comm. Fish Division
> > salmon management Representative Seaton requested that ADF&G
> > update their foregone harvest chart to include 2007 numbers. The
> > attached chart contains this update.
> >
> > Louie Flora,
> > House Fisheries Committee Aide,
> > Representative Seaton, Chair
> > (907) 465-3923
> >
>

Bristol Bay
Regional Seafood Development Assoc.
1120 Huffman Road, Anchorage, AK 99515

March 13, 2008

Governor Sarah Palin
State Capital
Juneau, Alaska 99801

Governor Palin;

The Bristol Bay Regional Seafood Development Association is keenly interested in processing capacity issues regarding the 2008 season. We have talked with biologists, processors and fishermen. From those meetings we see areas of common ground that may help resolve some of the problems and tension surrounding this issue.

We are aware of the recently concluded Bristol Bay Sockeye Salmon Processing Capacity Survey. Analysis by your administration of the information gathered in that survey indicates that sufficient capacity exists to process the expected 2008 harvest. We hope that turns out to be accurate. However, given the size of the forecast, we believe that consideration should also be given to other methods of reducing the degree to which fishing has been limited or suspended during large runs.

The BB-RSDA is grateful for the diligent management efforts that built a healthy sustainable fishery. It is a pleasant irony that we now have problems associated with such abundance. Nevertheless, over-escapement and under-harvest are key issues that substantially affect the potential value of the fishery.

We believe that the best solution to these problems involves making changes in management philosophy, to bring it in line with the consistently strong abundance of recent years.

The BB-RSDA supports the concept of maximum sustainable economic utilization of the Bristol Bay salmon harvest. For the BB-RSDA, this means sustainably harvesting and processing salmon in ways that create the greatest value for all participants; fishermen, processors, consumers and the state.

For fishermen, a key element of this concept is greater access to the harvestable surplus of Bristol Bay salmon. In recent years too many fishermen sat idle waiting for escapements to build and then sat idle again when too many fish hit. In 2007, for example, seven of the nine major river systems in Bristol Bay exceeded the top end of the sustainable escapement goals set by ADF&G.

The BB-RSDA respectfully asks your administration to encourage early fishing. Fishermen and processors are expected to make critical business decisions based on the ADF&G run forecast. We ask that ADF&G fishery managers to demonstrate similar levels of confidence in their forecast as are expected of fishermen and processors. When large runs are forecast, we believe managers can safely implement a policy of dispersed management and be more aggressive with early season fishing without compromising sustainability of the fishery.

Early fishing increases capacity of existing processors without the cost of mobilizing additional capacity. To summarize our thinking;

- Early season fishing allows industry to train processing workers and resolve production bottlenecks, before the overwhelming volume of peak season arrives. This shakedown period is equivalent to 1-2 million fish in additional capacity and provides other benefits:
  - Plants are already operating efficiently when the peak begins, reducing processing delays associated with the shakedown period. Overall quality of the pack is improved, for a substantial volume of fish.
  - Eliminates or at least delays onset of the "domino effect" during the peak, when processors successively exceed capacity and stop buying.
  - Reduces volume of fish shipped out of the Bay on long-haul tenders. These are lower quality, higher cost fish.
- Market demand is high for mid-late June sockeye. Scheduled openings at that time would allow customers to commit to substantial shipments of high value fresh product, as they did in 2004.

- The elongated season and modest landings of the early season provide opportunities to focus on higher-value, labor-intensive products like fresh shipments and fillets, without compromising peak production capacity. This facilitates a more diverse and more valuable product-form mix.

In the long term, the BB-RSDA would like to support your administration in adding greater certainty to forecasts by continuing the excellent genetic research already underway by ADFG and others. Each year, fishermen and processors make large investments based on those forecasts. Greater predictability allows for better planning, more efficiency, lower operating costs plus increased profitability and value.

We have not reached these conclusions lightly. Members of the BB-RSDA Board and the Executive Director interviewed independent biologists, met in person with all major processors and queried our membership. The overwhelming majority of these entities agree with and support these conclusions.

Respectfully offered,

Robert Heyano

Robert Heyano,
President, Bristol Bay
Regional Seafood Development Association

cc: Representative Paul Seaton
Representative Bryce Edgmon

Alaska Independent Fishermen's Marketing Association
P.O. Box 60131
Seattle, WA 98160
Phone/Fax (206) 542-3930

P.O. Box 5
Naknek, AK 99633

February 27, 2008

Honorable Governor Sarah Palin
P.O. Box 110001
Juneau, AK 99811-0001

Dear Governor Palin,

We have reviewed the ADF&G's "Summary of the 2008 Bristol Bay Sockeye Salmon Processing Capacity Survey". The survey indicates that the current processors are prepared to purchase and process 36.3 million sockeye next summer in Bristol Bay.

However, the report also states, "Individual processors may still impose limits per period, or for some limited time, because of quality concerns, tendering limitations, daily processing capacity limitations at specific plants, or other operational considerations".

During the past few seasons in the Bay we have experienced ongoing overescapements in most of the river systems. Concurrently, the vast majority of the fleet, both set and drift gillnets, have been faced with persistent and restrictive delivery limits. The lack of processing capacity has resulted in loss of income to fishermen and the region's communities.

We take special note that the processor capacity survey does not nearly adequately address limits or the welfare of the Bristol Bay fleet. Coupled with continued low salmon prices paid to the fleet, we are seeking relief from the economic dark clouds that are hanging over our heads.

We anticipate continued overescapements, and even more restrictive delivery limits during the '08 season if the status quo is given a nod of approval. Allowing millions of harvestable salmon to swim upriver would result in another serious economic blow to the fleet and local communities.

Simply stated, **we have lost faith in the credibility and accuracy of the Processing Capacity Survey**. We have little confidence that the processors can adequately handle the predicted salmon harvest during the upcoming season or respond to a potentially higher run size in a timely fashion.

We ask that you do whatever is possible to address and help solve this problem.

We clearly believe that new processors are needed to mitigate and provide remedy for this situation. Our first suggestion is to allow one or more foreign companies to enter Bristol Bay for the 2008 season and purchase salmon directly from the fleet. Second, assisting new domestic companies to operate in the region would offer relief to the fleet.

We welcome all the help your office can provide to alleviate this problem and help put the Bristol Bay fleet back on its feet.

Regards,

David Harsila,
President

Louie Flora

From: Erick Sabo [erick_sabo@hotmail.com]
Sent: Tuesday, March 25, 2008 12:32 PM
To: Louie Flora
Subject: Bristol Bay Production Capacity
Attachments: Trident Fleet Letter.pdf

Dear Mr. Flora:

I understand their will be a discussion tomorrow regarding Production Capacity in Bristol Bay. I just became aware of a letter sent out to Trident's fishermen that raises some concern, (see attached .pdf file), and thought you and the other legislative staff should be made aware of the information.

On the second page of the letter under the heading Ugashik, Trident Seafoods makes clear to their fishermen that they:

1. **Are not going to have sufficient fish buying capacity at Ugashik during the 2008 fishing season.**
2. **That they see the Ugashik fish as less desireable.**
3. **Due to conditions 1 & 2 the Trident fleet will be smaller than usual at Ugashik**

A number of other fish buyers are either not buying Ugashik fish or will also have a reduced buying effort.

A small system such as Ugashik cannot experience over escapement without damage to overall fish production. Ugashik is just now recovering from over escapement from the 1990's. Yet it seems clear that the fishing effort will not be sufficient to handle large numbers of fish coming into the Ugashik district. Ugashik will have a serious over escapement problem this summer. Undoubtedly, the buyers in Bristol Bay have assured Fish and & Wildlife that they can handle the large numbers of fish this summer. But, this will obviously not be the case in Ugashik. We will definitely need additional buyers this summer in the Ugashik District.

Thank you for considering my comments, and please forward my e-mail and the letter to whomevereIse is involved in the discussion of Processing Capacity in Bristol Bay.

Sincerely,

Erick Sabo
F/V Alsatia

How well do you know your celebrity gossip? Talk celebrity smackdowns here.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau, Alaska 99802-1668

February 14, 2007

Denby Lloyd
Commissioner
Alaska Department of Fish and Game
P.O. Box 25526
Juneau, Alaska 99802-5526

REC
FEB
M.F.M.S.C.

Dear Mr. Lloyd:

The North Pacific Fishery Management Council (Council) and I invite your agency to be a cooperating agency in the development of the Bering Sea Salmon Bycatch Management Environmental Impact Statement (EIS). We extend this invitation because ADF&G has special expertise and interest in matters concerning salmon and the impacts of salmon bycatch on Western Alaska.

The Council on Environmental Quality Regulations for implementing the procedural provisions of the National Environmental Policy Act emphasize agency cooperation early in the process. For your information, enclosed are sections 1501.6 and 1508.5 of these regulations that detail the role of the lead agency and the cooperating agency.

I look forward to your concurrence that ADF&G be designated a cooperating agency in the preparation of this analysis. Please provide a point of contact to work with Council and NMFS staff on this project. Diana Stram, Council staff, is the point of contact for ADF&G to coordinate with for this EIS. She can be reached at (907) 271- 2890.

Sincerely,

Robert D McVey, Acting
for Dr. James W. Balsiger
Administrator, Alaska Region

cc: Chris Oliver, North Pacific Fishery Management Council

Enclosure

Council on Environmental Quality NEPA Regulations

Sec. 1501.6 Cooperating agencies.

The purpose of this section is to emphasize agency cooperation early in the NEPA process. Upon request of the lead agency, any other Federal agency which has jurisdiction by law shall be a cooperating agency. In addition any other Federal agency which has special expertise with respect to any environmental issue, which should be addressed in the statement may be a cooperating agency upon request of the lead agency. An agency may request the lead agency to designate it a cooperating agency.

(a) The lead agency shall:

(1) Request the participation of each cooperating agency in the NEPA process at the earliest possible time.

(2) Use the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise, to the maximum extent possible consistent with its responsibility as lead agency.

(3) Meet with a cooperating agency at the latter's request.

(b) Each cooperating agency shall:

(1) Participate in the NEPA process at the earliest possible time.

(2) Participate in the scoping process (described in Sec. 1501.7).

(3) Assume on request of the lead agency responsibility for developing information and preparing environmental analyses including portions of the environmental impact statement concerning which the cooperating agency has special expertise.

(4) Make available staff support at the lead agency's request to enhance the latter's interdisciplinary capability.

(5) Normally use its own funds. The lead agency shall, to the extent available funds permit, fund those major activities or analyses it requests from cooperating agencies. Potential lead agencies shall include such funding requirements in their budget requests.

(c) A cooperating agency may in response to a lead agency's request for assistance in preparing the environmental impact statement (described in paragraph (b)(3), (4), or (5) of this section) reply that other program commitments preclude any involvement or the degree of involvement requested in the action that is the subject of the environmental impact statement. A copy of this reply shall be submitted to the Council.

Sec. 1508.5 Cooperating agency.

"Cooperating agency" means any Federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment. The selection and responsibilities of a cooperating agency are described in Sec. 1501.6. A State or local agency of similar qualifications or, when the effects are on a reservation, an Indian Tribe, may by agreement with the lead agency become a cooperating agency.

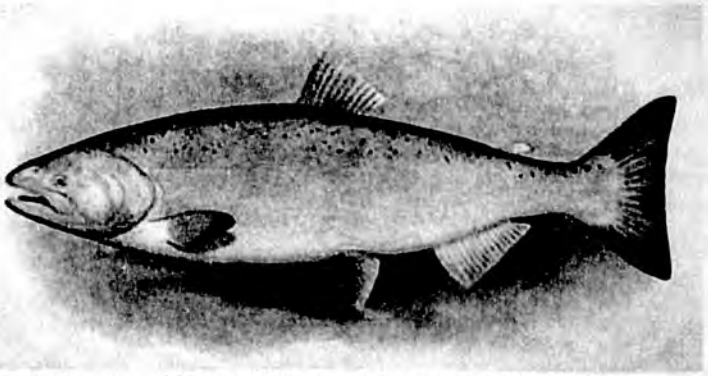
Chinook salmon mortality in BSAI groundfish fisheries (all gear and targets)

Year	Annual with CDQ	Annual without CDQ	Annual CDQ report	A season with CDQ	B season with CDQ	A season without CDQ	B season without CDQ
1991	48,880			46,392	2,488		
1992	41,955			31,419	10,536		
1993	46,014			24,688	21,326		
1994	43,821			38,921	4,900		
1995	23,436			18,939	4,497		
1996	63,205			43,316	19,888		
1997	50,530			16,401	34,129		
1998	55,431			18,930	36,501		
1999	13,521	12,937	584			8,205	4,732
2000	8,223	7,474	749			6,138	1,336
2001	40,547	37,986	2,561			23,093	14,893
2002	39,684	37,581	2,103			24,859	12,722
2003	55,422	52,709	2,713			39,755	12,954
2004	63,188	60,178	3,010			31,157	29,021
2005	74,967	72,911	2,056			32,850	40,061
2006	87,730	85,940	1,790			61,577	24,363
2007	130,139	124,495	5,644			74,377	50,119

Notes: Data for 1991-1997 from bsahalx.dbf found at G:\YYYY; includes CDQ
Data for 1998 from bsahalx98.dbf and boatrate98.dbf (CDQ)
Data for 1999 - 2002 from bsahalx.dbf plus the CDQ values found at
http://www.fakr.noaa.gov/cdq/daily/cdqctd07.pdf for 1999-2002.
Data for 2003 - 2007 from psnq_estimate table plus the CDQ values found at
http://www.fakr.noaa.gov/cdq/daily/cdqctd07.pdf.
Pollock CDQ 1992-1998; multi-species CDQ 1998-2007
A season - January 1 to June 10
B season - June 11 to December 31
Retrieval done 1/11/2008

Bering Sea Salmon Bycatch Management Environmental Impact Statement

All PDF files on this site can be viewed using Adobe Acrobat Reader software or free tools for the visually disabled.



NOAA Fisheries, in consultation with the North Pacific Fishery Management Council, announces its intent to prepare an Environmental Impact Statement (EIS) on salmon bycatch reduction measures in the Bering Sea, in accordance with the National Environmental Policy Act of 1969. The proposed action is to manage salmon bycatch in the Bering Sea pollock fishery in compliance with the Magnuson-Stevens Act. The proposed action would replace the current Chinook and Chum Salmon Savings Areas in the Bering Sea with new regulatory closures, salmon bycatch limits, or a combination of both. These management measures could incorporate current or new bycatch reduction methods. The scope of the EIS will be to determine the impacts to the human environment resulting from these salmon bycatch reduction measures.

ENVIRONMENTAL IMPACT STATEMENT

- Scoping Report, March 2008
- News Release: January 17, 2008 Salmon Bycatch EIS Under Way
- 72 FR 72994, December 26, 2007. Notice of intent to prepare an Environmental Impact Statement (EIS) on salmon bycatch reduction measures in the Bering Sea and Aleutian Islands management area. Comment period through February 15, 2008.
- Printed EIS Request Form

RELATED DOCUMENTS

- EA/RIR/FRFA for Modifying existing Chinook and chum salmon savings areas Final Rule Implementing Amendment 84 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area, October 2007
- BSAI Chinook Salmon Mortality Estimates, 1991-2007
- BSAI Non-Chinook Salmon Mortality Estimates, 1991-2007
- North Pacific Fishery Management Council - Salmon Bycatch Information

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION
OFFICE OF THE COMMISSIONER

SARAH PALIN, GOVERNOR
410 Willoughby Ave., Ste 303
Post Office Box 111800
Juneau, AK 99811-1800
PHONE: (907) 465-5066
FAX: (907) 465-5070
http://www.dec.state.ak.us

May 11, 2007

Mr. Mark Stopha
Alaska Wild Salmon Co, LLC
4455 N. Douglas Hwy
Juneau, Alaska 99801

Subject: April 17, 2007 Rulemaking Petition for Amendment to the Seafood Processing and Inspection Regulations at 18 AAC 34

Dear Mr. Stopha:

You have submitted a rulemaking petition under AS 44.62.220 requesting that the Department of Environmental Conservation (DEC) amend 18 AAC 34 .005(g) to extend the exemption that allows fishermen to gill and gut their catch on their own vessels to all vessels. I have carefully considered the points raised in your petition. Although I believe DEC needs to examine the 18 AAC 34.005(g) exemption, I have decided to deny your petition. Let me explain why.

The purpose of 18 AAC 34.005 is to "provide for consumer protection and to protect public health by ensuring the processing, sale and distribution of safe, wholesome and properly labeled seafood products." DEC considers gutting and gilling seafood to be a processing activity. As you point out, the current exemption under 18 AAC 34.005 (g)(3) and (4) specifically allows fishermen to gill and gut their catch on their own vessels provided the gutting and gilling is "necessary to maintain product quality or to prevent product loss" and occurs while the fishing vessel is "no closer to shore than one-half mile." The regulation seeks a balance between the fishermen's economic interest in uninterrupted fishing and all of our interest in seafood safety and quality. Over the years, the exemption has become widely used by fishermen regardless of the duration of processing delays. We have become increasingly concerned that more and more fish are being processed under the exemption and potentially without adequate sanitation safeguards.

Last year, DEC proposed regulations that would have required fishermen to meet some basic sanitation requirements when gilling and gutting their fish. While those proposed changes were never adopted, we hope to begin working with the seafood industry this fall to see what can be done to ensure that all fish are gilled, gutted and otherwise processed under the 18 AAC 005(g) exemption in accordance with basic sanitation guidelines. We will strive to make this rule-making process a cooperative effort with processors and fishermen, and one that includes due consideration of

Next Week Bristol Bay
Contact Robin - have Louis Invite
him

industry standards and practices. Proposed amendments to the seafood regulations in which you are interested may well be a result.

In the meantime, you can seek authorization for the processing activity described in your petition by applying for and complying with a processing permit under 18 AAC 34.035. Please note that DEC has proposed a new fee category for vessels processing less then 5,000 pounds of fish a day, with a permit that costs substantially less. The public notice period on these proposed regulations will end on June 8, 2007. I have attached a copy of the proposed regulations for your review.

I encourage you to participate in the rule-making this fall. Please contact Ron Klein, Food Safety and Sanitation Program Manager, at 907-269-7583 or ron_klein@dec.state.ak.us to learn more about the effort or if we can assist you in any way.

I appreciate your thoughtful petition and we will bear in mind the issues you have raised in your petition as we move ahead.

Sincerely,

Larry Hartig
Commissioner

Enclosure

YAHOO! MAIL Classic

Print - Close Window

Date: Fri, 22 Feb 2008 10:39:28 -0900

From: "Ryan, Kristin J (DEC)" <kristin.ryan@alaska.gov>

Subject: RE: Follow up: Question on Nov 07 Regulation for Tender vessels

To: mark_stopha@yahoo.com

CC: seafa@gci.net, "Klein, Ronald S (DEC)" <ron.klein@alaska.gov>, "Crome, Cora J (GOV)" <cora.crome@alaska.gov>

Are you available this afternoon?

-----Original Message-----
From: Mark Stopha [mailto:mark_stopha@yahoo.com]
Sent: Thursday, February 21, 2008 5:14 PM
To: Ryan, Kristin J (DEC)
Cc: seafa@gci.net; Klein, Ronald S (DEC); Crome, Cora J (GOV)
Subject: RE: Follow up: Question on Nov 07 Regulation for Tender vessels

In our recent letter, we did want to be able to dress fish on a tender.
We thought doing it under the Direct Marketing specifications would be a
middle ground with established guidelines, and not difficult because we
would follow these anyway. We're always willing to meet with anyone.

Thanks
Mark Stopha

--- "Ryan, Kristin J (DEC)" <kristin.ryan@alaska.gov>
wrote:

> For some reason this email got bounced back to me Mark so I am
> attempting to re-send.
>
> -----Original Message-----
> From: Ryan, Kristin J (DEC)
> Sent: Thursday, February 21, 2008 2:07 PM
> To: mark_stopha@yahoo.com
> Cc: seafa@gci.net; Klein, Ronald S (DEC); Crome, Cora J (GOV)
> Subject: RE: Follow up: Question on Nov 07 Regulation for Tender

> vessels
>
>
> Mark -
>
> I'm currently working out of the Juneau office.
> Would you be willing to
> come in and talk to me about your current
issues?
> I've reviewed the
> letter you sent to legislators asking for a
statute change to address
> your needs. I'd like to better understand
exactly what your operation
> is and why you feel a small processor permit
would not work.
>
> You previously were requesting the ability to
gill and gut salmon on
> your tender using the exemption in the seafood
regulations that allows

> harvesters to do that. It now sounds like you
are now requesting the
> ability to gill and gut under the Direct market
permit which includes
> some minimum sanitation requirements but is
also still restricted to
> harvesters.
>
> To answer your question below - yes, the change
to the seafood
> processing regulations was to add a new permit
for small processors so

> that the permit would not be unreasonably
expensive.
>
>
> Kristin Ryan
>
>
> -----Original Message-----
> From: Mark Stopha
[mailto:mark_stopha@yahoo.com]
> Sent: Tuesday, February 19, 2008 7:46 PM
> To: mark_stopha@yahoo.com; Ryan, Kristin J
(DEC)

> Cc: seafa@gci.net
> Subject: Follow up: Question on Nov 07
Regulation for Tender vessels
>
> SORRY:
> Dear Ms. Ryan:
> I need to clarify my previous email. I should
have referred my
> question for "floating processor" not "catcher
processor".
> So my question is:
>
> As I understand the regulations, the regulation
you cite to Kathy as a

> new regulation of last November was for fees
only, correct? Tender
> vessels under this regulation would need to
meet all requirements of a

> floating processor, and not the requirements of
a direct marketing
> vessel - is this correct?
> Thank you.
> > Mark
> --- Mark Stopha <mark_stopha@yahoo.com> wrote:
>
> > Dear Ms. Ryan:
> > As I understand the regulations, the
regulation
> you cite to Kathy as a
>
> > new regulation of last November was for fees
only,
> correct? Tender
> > vessels under this regulation would need to
meet
> all requirements of a
>
> > catcher processor, and not the requirements
of a
> direct marketing
> > vessel - is this correct?
> > Thank you.
> > Mark
> > --- Kathy Hansen <seafa@gci.net> wrote:
> >
> > >

> > >
> > >
> > > Kathy Hansen
> > >
> > > SE AK Fishermen's Alliance
> > >
> > > 9369 North Douglas Hwy
> > >
> > > Juneau, AK 99801
> > >
> > > 907-586-6652 phone
> > >
> > > 907-523-1168 fax
> > >
> > > seafa@gci.net
> > >
> > > http://www.seafa.org
> > >
> > > -----Original Message-----
> > > From: Ryan, Kristin J (DEC)
> > > [mailto:kristin.ryan@alaska.gov]
> > > Sent: Tuesday, February 19, 2008 11:14 AM
> > > To: seafa@gci.net
> > > Cc: Klein, Ronald S (DEC)
> > > Subject: FW: draft email for you to Hansen.
(not
> > in
> > > when I called)
> > >
> > > Kathy - I apologize for my delay.
> > >
> > > We produced minutes from that discussion
and
> > posted
> > > them on our website
> > > at
> > >
> > >
>
http://www.dec.state.ak.us/eh/fss/seafood/aspac.htm.
> > > Our perspective
> > > is that there was general support at the
ASPAC
> meeting for
> > > developing guidelines for gilling and
gutting
> fish on fishing boats.
> > > Our plan is to rely heavily on guidelines

> developed by others,
> > > particularly ASMI, selecting parts that
> specifically pertain to
> > seafood
> > > safety. We have
> > > received and will be reviewing the ASMI
> > guidelines.
> > > If Southeast
> > > Fishermen's Alliance has developed
guidelines we
> > are
> > > interested in
> > > reviewing them as well. This spring we will
> > schedule
> > > a follow-up call
> > > and invite the November 8, 2007 meeting
> > participants
> > > and other
> > > interested parties to go over the draft
> guidelines and discuss
> > > outreach approaches to ensure
dissemination.
> > >
> > > We are not planning any regulation changes.
We
> received a couple of
> > > comments after the meeting from fishermen
who
> have asked us to
> > > broaden the gutting and gilling exemption
to
> apply to fishing
> > > tenders in addition to harvesters. FDA
considers
> gutting and gilling
>
> > > occurring on tenders to be subject to the
> federal rules which Alaska
>
> > > applies through the Seafood Processing and
> Inspection Regulations.
> > > This enables Alaska
> > > to sell fish in interstate commerce under
Alaska
> rules. Gutting and
> > > gilling can occur on tenders under current
rules
> > and

> > > we have created a
> > > new category permit which went into effect
> > November
> > > 27, 2007 enabling
> > > vessels to process less than 5,000
pounds/day of
> fish at a reduced
> > > fee of $795.00 a year.
> > >
> > > I will be attending the UFA board meeting
> tomorrow and will touch
> > > base with you then as well.
> > >
> > > Thanks,
> > > Kristin Ryan
> > > Director
> > > Division of Environmental Health
> > > Department of Environmental Conservation
> > > 555 Cordova St., Anchorage, Alaska 99501
> > > 907.269.7644 phone 907.269.7654 fax
> > >
> > >
> > > -----Original Message-----
> > > From: Kathy Hansen [mailto:seafa@gci.net]
> > > Sent: Wed 2/6/2008 5:11 PM
> > > To: Ryan, Kristin J (DEC)
> > > Subject:
> > >
> > > Kristin, What is the current status of the
> > onboard
> > > seafood processing
> > > regulations changes - I haven't heard
anything
> > since
> > > the
> > >
> > > Nov. '07 ASPAC meeting?
> > >
> > >
> > >
> > > Kathy Hansen
> > >
> > > SE AK Fishermen's Alliance
> > >
> > > 9369 North Douglas Hwy
> > >
> > > Juneau, AK 99801
> > >

HAZARD ANALYSIS CRITICAL CONTROL POINTS

1.0 HACCP ANALYSIS (PRODUCT RELATED)

The following outlines the potential species hazards and the control mechanisms that are required onboard

Potential Hazard	Analysis	Control	CCP
Parasites	All products are frozen colder than 0°F (-17.7°C)	Freezing onboard, labelling.	No
Biogenic Amines	Albacore may have the potential to produce histamine (scombrotoxin formation). However, rapid processing controls the hazard and freezing prevents the formations of high levels of histamine.	Time and Temperature Controls	No
Preformed Toxins	Toxin formation (other than histamine) in wetfish species is not likely.	Not considered significant enough to warrant any type of control measure	No
Pathogens	No evidence available of any known pathogens (such as Clostridium , Type E and pathogenic Vibrio) harvested.	Not considered significant enough to warrant any type of control measure	No
Metal Stain	Metal stain occurs primarily with fish that have been frozen in a freezing system that has exposed copper parts or sources of copper.	Check freezing system on board contains no copper or brass or bronze components.	No
Chemical contamination	Chemical contamination from harvest area is not reasonably likely to occur. Hydraulic leaks or hose breakages may occur.	Fish reception Freezer Refrigeration Records	No
Fuel contamination	Fuel contamination is not likely to occur.	Stop fishing immediately, do not take any fish on board if fishing.	No
Foreign matter	Foreign material that is considered harmful to human health is not likely to present in the harvest area or in the product.	Fish reception	No
Pathogen growth	Pathogen growth (Listeria, Salmonella etc) are not likely due to time and temperature abuse during processing on board due to the nature of the operation and the intended use by the consumer.	Storage and Unloading Cleaning and sanitation	No

ON-BOARD FISH HANDLING PROCEDURES

FOR WFOA VESSELS

VESSEL STANDARD OPERATING PROCEDURES

FISHING VESSEL

---

http://seafood.ucdavis.edu/sanitation/vessels op.pdf

APRIL 2002

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Date: Mon, 25 Feb 2008 10:45:15 -0900

From: "McIntire, Orval D (DEC)" <duane.mcintire@alaska.gov> Add Mobile Alert

Subject: RE: Follow-up from Heather (Taku River Reds)

To: mark_stopha@yahoo.com, "Soares, Manuel J (DEC)" <manny.soares@alaska.gov>

CC: "Klein, Ronald S (DEC)" <ron.klein@alaska.gov>, "Ryan, Kristin J (DEC)" <kristin.ryan@alaska.gov>

Manny, your thoughts?
Duane

-----Original Message-----
From: Mark Stopha [mailto:mark_stopha@yahoo.com]
Sent: Monday, February 25, 2008 10:36 AM
To: McIntire, Orval D (DEC)
Cc: Heather Hardcastle
Subject: Follow-up from Heather (Taku River Reds)

So you believe that a small vessel like the Taku Wind
can meet the floating processor requirements? This
vessel is similar in size to the one I have, to which
Ernie Thomas indicated there was no way a vessel this
small could meet the requirements of a floating
processor. This is where I'm confused.
--- "McIntire, Orval D (DEC)"
<duane.mcintire@alaska.gov> wrote:

> Date: Mon, 25 Feb 2008 10:11:24 -0900
> From: "McIntire, Orval D (DEC)"
> <duane.mcintire@alaska.gov>

(1)
Harbor Fees (12)
Legal
Letter to fishe...
Licenses (4)
Mark
Marketing Grant
PFD
Photos
Pressure Bleeding
Processor Assoc
Quickbooks
Recipes
Recovery Yield
Resume (3)
Scales
Sea Log
Shipping
Stickers
Stopha Contacts
Testimonials
Treaty
Weather
Website Info (1)
Yahoo Info
assembly (2)
cc
fax
orders
outboard bluebook

Search Shortcuts
My Photos
My Attachments

> Subject: RE: Follow-up from Heather (Taku River
> Reds)
> To: mark_stopha@yahoo.com, "Soares, Manuel J
(DEC)"
> <manny.soares@alaska.gov>,
> "Ryan, Kristin J (DEC)"
<kristin.ryan@alaska.gov>,
> "Klein, Ronald S (DEC)" <ron.klein@alaska.gov>
> CC: Heather Hardcastle <salmongal@mac.com>
>
>
> Mark, no changes to the requirements only the
fee
> for <5000#.
>
> Duane
> -----Original Message-----
> From: Mark Stopha
[mailto:mark_stopha@yahoo.com]
> Sent: Monday, February 25, 2008 10:07 AM
> To: McIntire, Orval D (DEC)
> Cc: Heather Hardcastle
> Subject: Re: Follow-up from Heather (Taku River
> Reds)
>
> Hi Duane:
> Did the new class of processor license mean
there
> was
> also a change to the floating processor
regulations?
>
> I thought it was just a fee change.
>
> From my discussions with Ernie Thomas 2 years
ago,
> he
> indicated that although a floater did not have
to be
> under 65 feet, it usually was at least that
long to
> get all the requirements of a floating
processor in
> place to meet regulations (separate rooms for
roe,
> advanced sewage systems, grinding of offal,
etc).

> He
> said there was one vessel under 60', and when I
look
> up the floating processors in the CFEC and DEC
> databases, I didn't see any vessels under 60
feet
> (maybe there was one).
>
> So, am I missing something here?
>
> Thanks
> Mark
>
>
> --- Heather Hardcastle <heather@takurr.net>
wrote:
>
> > Hi Duane,
> >
> > Thanks for meeting with me last Thursday.
Our
> > conversation was very
> > helpful for me and I appreciate your taking
the
> time
> > to answer all of
> > my questions. We will email you a final
draft of
> > our packaging labels
> > for your approval in the next week. I'm glad
you
> > also had the chance
> > to visit Dick and Jason at Alaska Seafood
Company,
> > and have a good
> > idea how we and ASC plan to work together
this
> year.
> >
> > Duane, I downloaded a copy of the 2008
Seafood
> > Processors application
> > after our talk. I do not see the new
category of
> > floating processor
> > you and I discussed (<5,000 lbs./day,
$795/yr.).

> Is
> > it possible the
> > 2008 application doesn't yet reflect this
> category?
> > We would like to
> > apply for this permit and properly prepare
our
> > tender vessel, Taku
> > Wind, for the 2008 season.
> >
> > Per our conversation, I understand that, if
> > permitted, we may gut and
> > gill the fish we purchase from other
fishermen
> > aboard this tender
> > vessel (?). I also understand that other
members
> of
> > the department
> > are currently discussing whether heading will
also
> > be allowed aboard
> > properly permitted floating processors. Is
this
> > correct?
> >
> > As you know, we're very interested in being
able
> to
> > butcher (gut, gill
> > AND head) all fish that we purchase. Not
only
> does
> > removing the head
> > allow us to maintain the quality of the
salmon
> that
> > has just been
> > harvested [through our pressure-bleeding
> > techniques]. We also feel
> > that heading does not diminish public safety,
if
> all
> > butchering is
> > performed in a ADEC-approved facility (area
> covered
> > with hard roof,

> > washable walls, continuous chlorine-injection
> > system, monthly water
> > sampling, etc.).
> >
> > Finally, Duane, we understand that, as a currently
> > permitted direct
> > marketing vessel, F/V Heather Anne, we cannot gut,
> > gill or head the
> > fish we purchase from other fishermen. If we
> wished
> > to butcher the
> > fish we purchase from other fishermen aboard
> Heather
> > Anne, we assume
> > that we would need to apply for the new category
> of
> > floating processor
> > for this vessel, as well, (including a continuous
> > vs. a batch chlorine-
> > injection system, etc.)?
> >
> > Thank you for all of your assistance!
> >
> > Best,
> > Heather
> >
> > Heather Hardcastle
> > TAKU RIVER REDS
> > F/V Heather Anne & Tender Vessel Taku Wind
> > heather@takurr.net
> > (907) 463-3863
> >
> >
> >
> >
>
>
> -
> Mark Stopha and Sara Hannan
> Alaska Wild Salmon Company
> Wild Salmon and Salmon Pet Treats
> 4455 N. Douglas Hwy
> Juneau, AK 99801

> 907-463-3115
> www.GoodSalmon.com
>

-

Mark Stopha and Sara Hannan
Alaska Wild Salmon Company
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STATE OF ALASKA

SARAH PALIN, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL HEALTH

555 Cordova St.
Anchorage, Alaska 99501
Phone: 907-269-7644
Fax: 907-269-7654
www.dec.state.ak.us

Mr. Stopha, Alaska Wild Salmon Company
Mr. Peterson, Taku River Reds
Mr. Hand, Alaska Seafood Company
Mr. Merritt, Troller
Mr. Heller and Ms. Spencer, Cross Sound Seafoods
Mr. Lucey, Troller and Gillnetter
Mr. Botz, Seiner
Mr. Samuelson, Bristol Bay Gillnetter

Subject: Seafood Processing regulations

Mr. Stopha et al.

We have reviewed your letter dated January 29th, 2008 addressed to members of the legislature requesting a statute change so that the Alaska Department of Environmental Conservation (DEC) would allow you to gill and gut fish on your tender boat. I am hopeful with some clarification we can find a solution within our existing authorities.

It is the intent that our regulations are clear and grounded in our statutory obligation to ensure food processed in Alaska is safe for human consumption. After all, we want consumers to continue to trust in the safety of Alaskan seafood. We have created a variety of permit options to do just that including a new permit geared toward smaller vessel operations such as yours. I understand that you do not believe this new permit will work for you and would prefer to operate under an exemption or other permit option.

As we have discussed, with some technical assistance, I believe we can find a way for this new small seafood processor permit to work for you. The sanitation standards that must be met by all food handlers are similar, but how those standards are achieved varies greatly. Your facility only needs to be adequate to safely handle the amount of fish you will be processing. The minimum standards everyone has to comply with are access to clean water (all permits require the addition of chlorine to sea water), an area for processing that is pest and dust free, a method to contain domestic waste while processing, hand washing capacity, cleanable surfaces, adequate lighting, a cleaning plan, and a hazard analysis.

Every permitted facility or vessel is different and many operators find creative ways to comply. We are reviewing how other small vessel entrepreneurs have adapted their boats to meet the sanitation standards and will share those ideas with you. I, along with Division of Environmental Health seafood safety experts, are willing to work with you to find affordable ways to ensure you are handling Alaskan seafood in the safest way possible. We stand ready to assist you.

Sincerely,

Kristin Ryan

Kristin Ryan
Director
Division of Environmental Health

Cc:

Honorable Senator Kim Elton
Honorable Representative Beth Kertulla
Honorable Representative Andrea Doll
Honorable Senator Bert Stedman
Honorable Representative Peggy Wilson
Honorable Senator Lyman Hoffman
Honorable Representative Bryce Edgmon
Honorable Senator Gary Stevens
Honorable Representative Gabielle LeDoux
Honorable Representative Paul Seaton

Federal CFR
for Seafood Processing

(2) Maintaining adequate personal cleanliness.

(3) Washing hands thoroughly (and sanitizing if necessary to protect against contamination with undesirable microorganisms) in an adequate hand-washing facility before starting work, after each absence from the work station, and at any other time when the hands may have become soiled or contaminated.

(4) Removing all unsecured jewelry and other objects that might fall into food, equipment, or containers, and removing hand jewelry that cannot be adequately sanitized during periods in which food is manipulated by hand. If such hand jewelry cannot be removed, it may be covered by material which can be maintained in an intact, clean, and sanitary condition and which effectively protects against the contamination by these objects of the food, food-contact surfaces, or food-packaging materials.

(5) Maintaining gloves, if they are used in food handling, in an intact, clean, and sanitary condition. The gloves should be of an impermeable material.

(6) Wearing, where appropriate, in an effective manner, hair nets, headbands, caps, beard covers, or other effective hair restraints.

(7) Storing clothing or other personal belongings in areas other than where food is exposed or where equipment or utensils are washed.

(8) Confining the following to areas other than where food may be exposed or where equipment or utensils are washed: eating food, chewing gum, drinking beverages, or using tobacco.

(9) Taking any other necessary precautions to protect against contamination of food, food-contact surfaces, or food-packaging materials with microorganisms or foreign substances including, but not limited to, perspiration, hair, cosmetics, tobacco, chemicals, and medicines applied to the skin.

(c) *Education and training.* Personnel responsible for identifying sanitation failures or food contamination should have a background of education or experience, or a combination thereof, to provide a level of competency necessary for production of clean and safe food. Food handlers and supervisors should receive appropriate training in proper food handling techniques and food-protection principles and should be informed of the danger of poor personal hygiene and insanitary practices.

(d) *Supervision.* Responsibility for assuring compliance by all personnel with all requirements of this part shall be clearly assigned to competent supervisory personnel.

[51 FR 24475, June 19, 1986, as amended at 54 FR 24892, June 12, 1989]

§ 110.19 Exclusions.

(a) The following operations are not subject to this part: Establishments engaged solely in the harvesting, storage, or distribution of one or more "raw agricultural commodities," as defined in section 201(r) of the act, which are ordinarily cleaned, prepared, treated, or otherwise processed before being marketed to the consuming public.

(b) FDA, however, will issue special regulations if it is necessary to cover these excluded operations.

Subpart B—Buildings and Facilities

§ 110.20 Plant and grounds.

(a) *Grounds.* The grounds about a food plant under the control of the operator shall be kept in a condition that will protect against the contamination of food. The methods for adequate maintenance of grounds include, but are not limited to:

(1) Properly storing equipment, removing litter and waste, and cutting weeds or grass within the immediate vicinity of the plant buildings or structures that may constitute an attractant, breeding place, or harborage for pests.

(2) Maintaining roads, yards, and parking lots so that they do not constitute a source of contamination in areas where food is exposed.

(3) Adequately draining areas that may contribute contamination to food by seepage, foot-borne filth, or providing a breeding place for pests.

(4) Operating systems for waste treatment and disposal in an adequate manner so that they do not constitute a source of contamination in areas where food is exposed.

If the plant grounds are bordered by grounds not under the operator's control and not maintained in the manner described in paragraph (a) (1) through (3) of this section, care shall be exercised in the plant by inspection, extermination, or other means to exclude pests, dirt, and filth that may be a source of food contamination.

(b) *Plant construction and design.* Plant buildings and structures shall be suitable in size, construction, and design to facilitate maintenance and sanitary operations for food-manufacturing purposes. The plant and facilities shall:

(1) Provide sufficient space for such placement of equipment and storage of materials as is necessary for the maintenance of sanitary operations and the production of safe food.

(2) Permit the taking of proper precautions to reduce the potential for contamination of food, food-contact surfaces, or food-packaging materials with microorganisms, chemicals, filth, or other extraneous material. The potential for contamination may be reduced by adequate food safety controls and operating practices or effective design, including the separation of operations in which contamination is likely to occur, by one or more of the following means: location, time, partition, air flow, enclosed systems, or other effective means.

(3) Permit the taking of proper precautions to protect food in outdoor bulk fermentation vessels by any effective means, including:

(i) Using protective coverings.

(ii) Controlling areas over and around the vessels to eliminate harborages for pests.

(iii) Checking on a regular basis for pests and pest infestation.

(iv) Skimming the fermentation vessels, as necessary.

(4) Be constructed in such a manner that floors, walls, and ceilings may be adequately cleaned and kept clean and kept in good repair; that drip or condensate from fixtures, ducts and pipes does not contaminate food, food-contact surfaces, or food-packaging materials; and that aisles or working spaces are provided between equipment and walls and are adequately unobstructed and of adequate width to permit employees to perform their duties and to protect against contaminating food or food-contact surfaces with clothing or personal contact.

(5) Provide adequate lighting in hand-washing areas, dressing and locker rooms, and toilet rooms and in all areas where food is examined, processed, or stored and where equipment or utensils are cleaned; and provide safety-type light bulbs, fixtures, skylights, or other glass suspended over exposed food in any step of preparation or otherwise protect against food contamination in case of glass breakage.

(6) Provide adequate ventilation or control equipment to minimize odors and vapors (including steam and noxious fumes) in areas where they may contaminate food; and locate and operate fans and other air-blowing equipment in a manner that minimizes the potential for contaminating food, food-packaging materials, and food-contact surfaces.

(7) Provide, where necessary, adequate screening or other protection against pests.

§ 110.35 Sanitary operations.

(a) *General maintenance.* Buildings, fixtures, and other physical facilities of the plant shall be maintained in a sanitary condition and shall be kept in repair sufficient to prevent food from becoming adulterated within the meaning of the act. Cleaning and sanitizing of utensils and equipment shall be conducted in a manner that protects against contamination of food, food-contact surfaces, or food-packaging materials.

(b) *Substances used in cleaning and sanitizing; storage of toxic materials.* (1) Cleaning compounds and sanitizing agents used in cleaning and sanitizing procedures shall be free from undesirable microorganisms and shall be safe and adequate under the conditions of use. Compliance with this requirement may be verified by any effective means including purchase of these substances under a supplier's guarantee or certification, or examination of these substances for contamination. Only the following toxic materials may be used or stored in a plant where food is processed or exposed:

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL HEALTH

SARAH PALIN, GOVERNOR

555 Cordova St.
Anchorage, Alaska 99501
Phone: 907-269-7644
Fax: 907-269-7654
www.dec.state.ak.us

Mr. Stopha, Alaska Wild Salmon Company
Mr. Peterson, Taku River Reds
Mr. Hand, Alaska Seafood Company
Mr. Merritt, Troller
Mr. Heller and Ms. Spencer, Cross Sound Seafoods
Mr. Lucey, Troller and Gillnetter
Mr. Botz, Seiner
Mr. Samuelson, Bristol Bay Gillnetter

Subject: Seafood Processing regulations

Mr. Stopha et al.

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As we have discussed, with some technical assistance, I believe we can find a way for this new small seafood processor permit to work for you. The sanitation standards that must be met by all food handlers are similar, but how those standards are achieved varies greatly. Your facility only needs to be adequate to safely handle the amount of fish you will be processing. The minimum standards everyone has to comply with are access to clean water (all permits require the addition of chlorine to sea water), an area for processing that is pest and dust free, a method to contain domestic waste while processing, hand washing capacity, cleanable surfaces, adequate lighting, a cleaning plan, and a hazard analysis.

Every permitted facility or vessel is different and many operators find creative ways to comply. We are reviewing how other small vessel entrepreneurs have adapted their boats to meet the sanitation standards and will share those ideas with you. I, along with Division of Environmental Health seafood safety experts, are willing to work with you to find affordable ways to ensure you are handling Alaskan seafood in the safest way possible. We stand ready to assist you.

Sincerely,

Kristin Ryan

Kristin Ryan
Director
Division of Environmental Health

Cc:

Honorable Senator Kim Elton
Honorable Representative Beth Kertulla
Honorable Representative Andrea Doll
Honorable Senator Bert Stedman
Honorable Representative Peggy Wilson
Honorable Senator Lyman Hoffman
Honorable Representative Bryce Edgmon
Honorable Senator Gary Stevens
Honorable Representative Gabielle LeDoux
Honorable Representative Paul Seaton

restrict the Quantity

Mr. Stopha -

Duane asked you for that information to help us figure out all the aspects of the issue as part of our fact finding efforts to work on a regulation change. It should be evidence to you of our due diligence to address the issue.

We have been clear to you, as well as everyone else, you will have to comply with our existing regulations and obtain a small seafood processor's permit this season if you choose to process purchased fish.

Kristin Ryan
Director

-----Original Message-----
From: Mark Stopha [mailto:mark_stopha@yahoo.com]
Sent: Mon 4/7/2008 2:41 PM
To: Ryan, Kristin J (DEC); Len Peterson; McIntire, Orval D (DEC); Edgmon, Bryce E (LAA); Johnson, Craig W (LAA); Ledoux, Gabrielle R (LAA); Seaton, Paul (LAA); Wilson, Peggy A (LAA)
Cc: Soares, Manuel J (DEC); Klein, Ronald S (DEC); Renee Weber; Heather Hardcastle; Peterson, Sheila (LAA); Chris McDowell; ufa2@ufa-fish.org; Cadiente, Paula J (LAA); Len Peterson; McCarty, Hannah (LAA); Barry, Timothy M (DFG); Boario, Maridon A (LAA); njbotz@gci.net; Doll, Andrea (LAA); Elton, Kim S (LAA); Fleming, Laura L (ASMI); Kerttula, Beth (LAA); yakutat_salmon_board@yahoo.com; meritime@aptalaska.net; sockeye1@nushtel.net; dspencerak@yahoo.com; Flora, Louie (LAA); alaskaseafoodco@wildak.net; mark_stopha@yahoo.com; Carlson-Vandort, Marit K (DEC)
Subject: Purchasing and dressing fish on board a direct-market vessel

Dear Ms. Ryan:

The email below was sent to me by you on Oct 27, 2006. (Yes, 2006). The one you sent today, April 7, 2008, is a virtual cut and paste.

Your "committment to working with us" has gone on a long time. Unfortunately, it's simply untrue. We've requested time and again regulation changes to address our issue, yet DEC has never brought them forward in any manner in any regulatory forum. We've commented on regulations, but DEC has neither brought them forward nor given them any due consideration.

Duane asked us specifically in his April 3 email:
Quote: "The question has been asked on how you would be setting up your vessel to comply with a direct market vessel requirements that would include an approved Marine Sanitation Device, overhead protection, hand wash sink, area to safely store cleaning supplies, area to clean the fish properly and keep separate from the raw fish and any of the

requirements list in 18 ACC 34 - Seafood Processing and Inspections Regulation?"

This CLEARLY requests plans for DIRECT MARKETING requirements, does it not? Yet you state in the email to us today the request was for the small floating processor permit. Again, like your testimony in front of the House Fisheries Committee, you are being intentionally deceptive and misleading in your comments to legislators. You say one thing to them, and another to us.

Only when we got legislative interest have you actually talked to us about real changes, but this will soon cease when any pressure you've felt from the legislature goes away at legislative adjournment next week.

Our only recourse has been through the legislature, since neither you nor the administration have any real intent to address this matter. You're saying almost verbatim the same thing in 2008 as you did in 2006, and that "commitment" you state has resulted in absolutely no action by your department.

Mark Stopha

Email from Kristin Ryan, Oct 27, 2006

Subject: RE: FW: Direct Market Processing Inquiry
Date: Fri, 27 Oct 2006 11:14:36 -0800
From: "Ryan, Kristin J."
<Kristin_Ryan@dec.state.ak.us> Add to Address Book
Add Mobile Alert
To: mark@goodsalmon.com
CC: "Klein, Ron" <Ron_Klein@dec.state.ak.us>, "Soares, Manny" <Manny_Soares@dec.state.ak.us>

Mr. Stopha

You're correct. We cannot permit you under existing regulations. Title 17.20.005 gives the commissioner the authority to adopt regulations that would ensure food offered to the public is handled in a sanitary manner. As with all Statutes, departments then create regulations to outline the manner in which those State law will be implemented. 18 AAC 34 are the regulations that implement title 17.20 for seafood explicitly. There are other regulations pertaining to other food industries that implement title 17.20 as well.

Many parties have a vested interest in the permitting requirements for seafood processing. The regulations are drafted attempting to fairly stipulate requirements to all groups while ensuring safe food. The change you propose would have significant implications to those other groups. That is one reason why the public process that is part of regulation changes is particularly important. A contentious issues such as this would require workshops and public hearings to facilitate the public debate that would ensue and take significant time, effort and money.

While we support entrepreneurs, we cannot by-pass the process required by law to change regulations nor can we harness resources now committed to other important efforts. In the mean time, you have options available

to you such has paying a processor to strip the roe or purchasing the
roe stripped by permitted fishermen.

I apologize we cannot be of more assistance at this time.

Kristin

--- "Ryan, Kristin J (DEC)" <kristin.ryan@alaska.gov> wrote:

> Len and Mark-
>
> Changes to any regulations and these in particular,
> impact more than just small fishermen. Every
> processor who has to comply with high standards is
> concerned about the safety of Alaska's seafood and
> fairness. If we don't thoroughly work through all
> the different scenarios, unintended consequences are
> a guarantee. For example, as I understand it, just
> allowing fishermen with a Direct Market Permit to
> buy fish won't solve Mark's issue because he wants
> to be a tender and process fish.
>
> We are committed to finding a solution and are
> working on it but even if we knew what was the best
> approach right now, the regs wouldn't get through
> the legally mandated process by this fishing season.
> I realize you are both frustrated with the process
> and angry DEC hasn't taken a closer look sooner. But
> we are now and I am committed to finding a solution.
> We are working with Dept of Law now to determine the
> best way to proceed with some sort of pre-regulation
> public process to garner as much input as possible
> before proposing a regulation change. This is not a
> delay tactic but a necessary public process.
>
> As we have said all along, if you want to process
> purchased fish this year, you will need to comply
> with the small processor's permit. Duane was asking
> for plans expecting an application for that permit.
> From what little I know about your boat Len, I still
> believe that is possible.
>
> Kristin Ryan
> Director
> Environmental Health
>
>
> -----Original Message-----

> From: Mark Stopha [mailto:mark_stopha@yahoo.com]
> Sent: Mon 4/7/2008 11:03 AM
> To: Len Peterson; McIntire, Orval D (DEC); Edgmon,
> Bryce E (LAA); Johnson, Craig W (LAA); Ledoux,
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> meritime@aptalaska.net; sockeye1@nushtel.net;
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> > > From: Len Peterson [mailto:petersol@mac.com]
> > > Sent: Friday, April 04, 2008 3:20 PM
> > > To: McIntire, Orval D (DEC); Ryan, Kristin J
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>

--- "Ryan, Kristin J (DEC)" <kristin.ryan@alaska.gov>
wrote:

> Len and Mark-
>
> Changes to any regulations and these in particular,
> impact more than just small fishermen. Every
> processor who has to comply with high standards is
> concerned about the safety of Alaska's seafood and
> fairness. If we don't thoroughly work through all
> the different scenarios, unintended consequences are
> a guarantee. For example, as I understand it, just
> allowing fishermen with a Direct Market Permit to
> buy fish won't solve Mark's issue because he wants
> to be a tender and process fish.
>
> We are committed to finding a solution and are
> working on it but even if we knew what was the best
> approach right now, the regs wouldn't get through
> the legally mandated process by this fishing season.
> I realize you are both frustrated with the process
> and angry DEC hasn't taken a closer look sooner. But
> we are now and I am committed to finding a solution.
> We are working with Dept of Law now to determine the
> best way to proceed with some sort of pre-regulation
> public process to garner as much input as possible
> before proposing a regulation change. This is not a
> delay tactic but a necessary public process.
>
> As we have said all along, if you want to process
> purchased fish this year, you will need to comply
> with the small processor's permit. Duane was asking
> for plans expecting an application for that permit.
> From what little I know about your boat Len, I still
> believe that is possible.
>
> Kristin Ryan
> Director
> Environmental Health
>
>
> -----Original Message-----
> From: Mark Stopha [mailto:mark_stopha@yahoo.com]
> Sent: Mon 4/7/2008 11:03 AM
> To: Len Peterson; McIntire, Orval D (DEC); Edgmon,
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Economic Impacts of the Prince William Sound Aquaculture Corporation: 2006 Update

Prepared for:
Prince William Sound Aquaculture Corporation

McDowell GROUP
Research-Based Consulting
Juneau
Anchorage
Kodiak

May 2007

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EXECUTIVE SUMMARY

This study analyzes the impacts of the Prince William Sound Aquaculture Corporation (PWSAC) on regional and statewide economies. This is the third update to a report issued originally in 2001. The current report reflects data through 2006; earlier reports addressed data through 2000, 2002 and 2004. The report examines the impact of PWSAC activities on commercial, sport, personal use and subsistence harvests. It also examines the market conditions for those salmon species that currently are most important to PWSAC's production. Key findings from the analysis are noted below.

Summary of Economic Impacts

- In 2006, processors, commercial fishermen, and sport fishing service businesses earned an estimated $82 million from PWSAC salmon. The estimated economic impacts from these earnings, plus the activities of the PWSAC organization itself, were $135 million in total economic output, including $42 million in labor income and 750 jobs.[1] Impacts for each sector (commercial fishing, seafood processing, sport, personal use and subsistence harvests, and PWSAC operations) are summarized below.

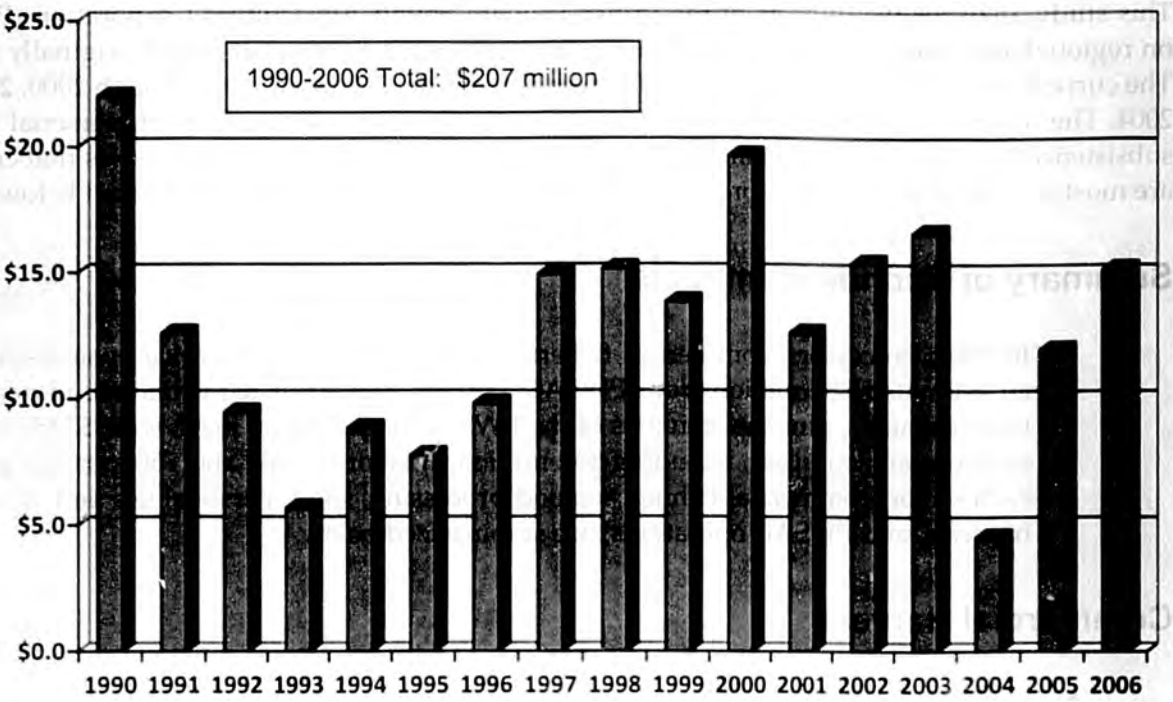
Commercial Harvest

- In 2006, 34 million pounds of PWSAC salmon were commercially harvested in Prince William Sound, with an ex-vessel value of $15 million to commercial fishermen. Though the harvest volume was about 40 percent lower than the five-year average, the value of the harvest was 20 percent higher, due to a favorable species mix and strong prices for key species.
- From 1990 to 2006, commercial fishermen harvested 848 million pounds of PWSAC salmon in common property fisheries with a total ex-vessel value of $207 million.[2]
- From 1990 to 2006, commercial fishermen contributed $12 million in enhancement taxes in support of PWSAC. The $207 million ex-vessel value of PWSAC salmon harvested during the same time period returned fishermen more than $17 for every $1 of tax paid.
- From 1990 to 2006, PWSAC salmon accounted for an average of 35 percent of ex-vessel value and 49 percent of total volume of the Prince William Sound commercial fishery.

[1] Total output refers to all spending activity generated throughout the regional economy. An economic model, IMPLAN, was used to estimate total output. One dollar of input often results in more than one dollar of output because the dollar may circulate through many sectors in the economy.

[2] Ex-vessel value is the gross value paid to commercial fishermen for their salmon harvest.

Ex-Vessel Value of Common Property Commercial Harvest of PWSAC Salmon, 1990-2006
(millions of dollars)



Source: Alaska Department of Fish and Game and McDowell Group estimates.

- Resident ex-vessel earnings from PWSAC salmon harvested in 2006 were $11.7 million. This resulted in an estimated $22.8 million in total economic output, including $18.7 million in labor income and 345 jobs.
- Alaska resident permit holders see most of the economic benefits of PWSAC production. In 2006, Alaska resident permit holders earned an estimated 77 percent of the total PWSAC ex-vessel value.
- From 2004 to 2006, Cordova resident permit holders earned a total of $10.2 million from PWSAC fish. Homer residents were the next highest earners, followed by Valdez and Anchorage.

Ex-Vessel Value of PWSAC Commercial Harvest by Permit Holders' Area of Residence, Top Seven Communities 2004 to 2006

	2004	2005	2006
Cordova	$2,391,000	$5,121,000	$5,694,000
Homer	641,000	1,990,000	2,213,000
Valdez	178,000	945,000	1,051,000
Anchorage	283,000	666,000	741,000
Girdwood	88,000	506,000	563,000
Wasilla	88,000	231,000	257,000
Kasilof	$48,000	$207,000	$230,000

Source: Commercial Fisheries Entry Commission and McDowell Group estimates.

- Regional economic impacts include an estimated 120 jobs and $8 million in payroll in the Valdez-Cordova area, 90 jobs and $3 million in payroll in the Kenai Peninsula area, and 60 jobs and $2 million in payroll in the Anchorage area.

Estimated Economic Output from Commercial Ex-Vessel Value of PWSAC Salmon, 2006

Census Area	2006 Ex-Vessel Income	Economic Output	Jobs	Payroll
Valdez-Cordova	$6,789,000	$9,946,000	120	$8,195,000
Kenai Peninsula	$2,913,000	$4,897,000	90	$3,472,000
Anchorage	$1,475,000	$2,621,000	60	$2,105,000
Statewide	$11,716,000	$22,846,000	345	$18,734,000

Source: CFEC and McDowell Group estimates.

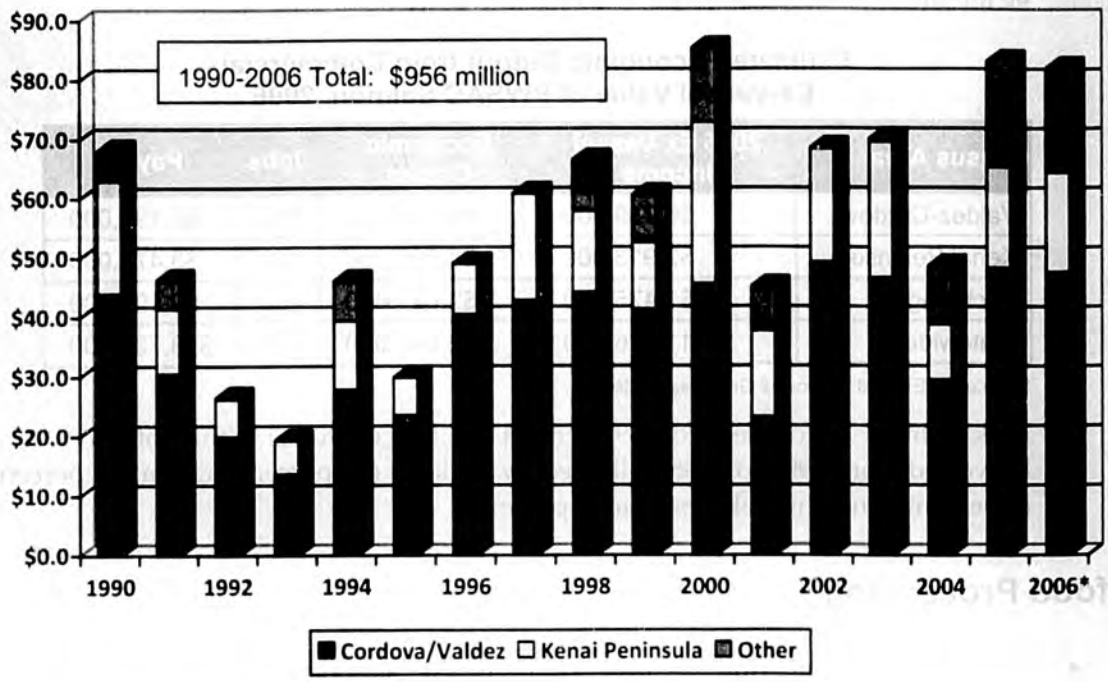
- Pink salmon accounted for 39 percent of the ex-vessel value of PWSAC salmon harvested from 1990 to 2006, followed by sockeye (38 percent), chum (20 percent), coho (2 percent), and chinook (less than 1 percent).

Seafood Processing

- The first wholesale value of processed PWSAC salmon in 2006 was an estimated $81 million. This is comparable to the 2005 total of $83 million. Lower harvests in 2006 were offset by higher prices and a species mixed that favored high-value species.
- Between 1990 and 2006, the total first wholesale value of commercial and cost recovery harvest of PWSAC salmon was $956 million, with an annual average value of $56 million.[3]
- PWSAC salmon are processed by as many as 17 different Alaska processors. In terms of wholesale value, most PWSAC salmon are processed in the Cordova/Valdez area and on the Kenai Peninsula.
- From 1990 to 2006, first wholesale value for Cordova/Valdez area processors was about $618 million, followed by $237 million to Kenai Peninsula processors, and $83 million to processors elsewhere in the state.
- Processing of PWSAC fish generated an estimated $97 million in total output in 2006, including $17 million in labor income and 305 jobs.

[3] First wholesale value is the first sale of fish from a processor to a buyer outside of the processor's affiliate network.

First Wholesale Value of PWSAC Salmon and Roe by Processor Region, 1990 to 2006
(millions of dollars)



Source: ADF&G and McDowell Group estimates. 2004 data is preliminary.

- By species (including roe), pink salmon contributed the largest share of wholesale value (61 percent), followed by chum (21 percent) and sockeye (16 percent). Coho accounted for 1 percent of value and chinook was less than 1 percent.

Sport Harvest

- PWSAC-origin salmon are harvested in sport fisheries over a wide area, including the Copper River Basin and Prince William Sound.
- In 2006, sport harvests of PWSAC salmon totaled 49,000 fish, the vast majority of which were pink salmon. The previous year saw harvests of approximately 27,000 fish. These oscillations are consistent with two-year cycles in pink salmon abundance.
- From 1990 to 2006, sport fishermen in the Prince William Sound area harvested 246,000 PWSAC salmon.
- Economic impacts from the 2006 harvest were an estimated $524,000 in total output, including $262,000 in payroll and 13 jobs.
- The record harvest of PWSAC fish occurred in 2006, when anglers harvested 49,000 fish. The 2000 harvest was second largest at 46,000 fish.

Sport Harvest of PWSAC Salmon in Numbers of Fish, 2002 to 2006

Species	2002	2003	2004	2005	2006
Chinook	80	-	-	-	-
Sockeye	7,756	4,000	1,869	3,400	1,863
Coho	22,698	13,067	4,543	22,673	46,425
Pink	3,013	3,009	2,999	100	-
Chum	1,823	1,811	1,820	500	1,000
Total	35,370	21,887	11,231	28,519	49,288

Source: ADF&G, PWSAC and McDowell Group estimates.

Personal Use and Subsistence Fisheries

- In 2005, personal use and subsistence harvesters took 70,900 PWSAC-origin sockeye salmon.
- Between 1999 and 2005, Alaskans from across the state harvested 316,000 PWSAC sockeye in the Copper River personal use and subsistence fisheries.
- The largest harvests of PWSAC sockeye were by residents of Fairbanks, Anchorage, Wasilla, North Pole and Copper Center.

Copper River Personal Use and Subsistence Fishery Harvest of PWSAC Sockeye, 1999-2005 Total by Place of Residence Top Nine Communities

City	1999	2000	2001	2002	2003	2004	2005	Grand Total
Fairbanks	7,333	4,614	3,829	18,268	9,605	5,367	17,031	66,047
Anchorage	9,388	4,896	5,071	18,190	9,634	4,525	12,593	64,297
Wasilla	3,246	2,045	1,853	8,067	4,105	2,106	7,647	29,069
North Pole	2,312	1,287	1,243	5,223	3,026	1,636	5,459	20,186
Copper Center	2,209	1,253	1,255	6,466	4,174	1,308	4,686	21,351
Eagle River	2,352	868	1,149	4,278	2,063	970	3,294	14,974
Delta	1,288	762	674	2,597	1,672	777	2,973	10,743
Glennallen	2,254	1,100	944	5,175	2,652	688	2,964	15,777
Valdez	1,182	769	744	3,010	1,271	814	2,224	10,014

Source: ADF&G and McDowell Group estimates.

* Reporting requirements were changed in 2000 and may result in some inconsistencies in the time series data.

PWSAC Organization

- The PWSAC organization creates an annual average of 72 jobs in the regional economy. The organization generates annual payroll and expenditures of $3.5 million within the state, plus an additional $2.5 million in out-of-state expenditures.
- Economic impacts of PWSAC spending inciude approximately $17 million in total output, 190 jobs and $5.7 million in labor income.

Purpose and Scope

The purpose of this study is to provide an estimate of the economic impacts of PWSAC's hatcheries in Southcentral Alaska. Analyses include:

Commercial Harvest of PWSAC Salmon. In this section, the overall and regional economic benefits of PWSAC salmon are estimated based on ex-vessel income to permit holders in the Prince William Sound commercial fishery. In addition, regional economic effects from PWSAC salmon harvest are reported.

Economic Impacts of the Seafood Processing Industry. This section addresses the overall and regional economic impacts of processing PWSAC salmon based on first wholesale value and indirect economic impacts on the regional economy.

Sport Harvest of PWSAC Salmon. The sport harvest of PWSAC salmon is addressed, including economic impacts from angler spending.

Personal Use and Subsistence Harvest of PWSAC Salmon. The Copper River dipnet and fishwheel personal use and subsistence PWSAC harvests are described, including estimated number of fish harvested by fishermen's town of residence and economic impacts of participant spending.

Tax Payments from PWSAC Harvest. The fisheries business and enhancement tax revenue paid from the harvest of PWSAC fish are presented, including the ratio of income earned to enhancement tax paid by commercial fishermen.

Methodology

The data used in this report comes from a variety of sources, including PWSAC, Alaska Commercial Fisheries Entry Commission (CFEC), Alaska Department of Labor and Workforce Development, Alaska Department of Revenue, and Alaska Department of Fish and Game (ADF&G). It should be noted that available data on the economics of the region's seafood industry, sport, personal use and subsistence fisheries are limited, and in some cases non-existent. This is particularly true in areas related to personal income of commercial fishermen and the value of sport fishing activity. In these cases, estimates are based on the best available data.

Some preliminary commercial and sport harvest data was available through 2004. Some wholesale value data was unavailable from the State of Alaska due to confidentiality regulations. Therefore, wholesale values should be considered minimum estimates. Ex-vessel income for some communities was restricted due to state confidentiality laws. For these communities, the fishery average income per permit by gear type was used as a proxy.

Processor wholesale data and commercial harvest data by community of residence were available through 2005 from ADF&G and CFEC. For 2006, processor wholesale data was estimated by multiplying the ratio of ex-vessel to wholesale value in 2005 by the estimated ex-vessel value for 2006, based on ADF&G annual reports. The study team also assumed that the wholesale value of PWSAC salmon in 2006 was apportioned by area as it was in 2005. Ex-vessel value by community for 2006 was assumed to be in the same proportion as for 2005, and is estimated based on ADF&G annual reports. The 2006 estimates will be updated with actual ADF&G and CFEC data in future reports.

Wholesale value data for roe in Prince William Sound is not available. When fewer than four companies in a region process a seafood product, the State of Alaska considers the data confidential to protect the financial interests of the involved parties. The value of roe in the region was estimated from the statewide wholesale roe values, and assumed to be in proportion to the total contribution of Prince William Sound region salmon to the statewide total, by species. The wholesale value contribution of PWSAC salmon roe to the regional total was assumed to be in the same proportion as the contribution of PWSAC salmon to the regional total, by species.

Sport fishery harvest figures for PWSAC chinook, coho and sockeye are based on PWSAC hatchery manager estimates reported in annual reports to ADF&G. PWSAC pink salmon and chum are not reported in PWSAC reports, but are assumed to be harvested in substantial numbers by Prince William Sound anglers. For chum salmon, the percentage of PWSAC chum in the sport fishery is assumed to be the same as the PWSAC contribution to the commercial fishery. For pink salmon, the sport harvest in the Valdez area is assumed to be entirely from the Valdez Fishery Development Association (VFDA), and not from PWSAC. Therefore, the PWSAC contribution to the pink salmon sport fishery was assumed to be the same proportion as the PWSAC contribution to the commercial fishery in the Prince William Sound area, excluding the Valdez area.

The Copper River dipnet and fishwheel fisheries are important to thousands of Alaskans. The remoteness of the fishing area means that many users travel long distances to participate. These fishers buy fuel, ice, fishing equipment and clothing to harvest their catch. Estimating where these dollars are spent would require extensive research beyond the scope of this study. Furthermore, people would travel to the fishery to dipnet salmon even in the absence of PWSAC fish. Data is provided on estimated harvest per Alaska community, based on ADF&G Subsistence Division data.

Economic Modeling

The McDowell Group used the Impact Analysis for Planning Model (IMPLAN) to estimate the distribution of economic impacts of PWSAC salmon harvest and production throughout the economy. The IMPLAN model estimates total economic output, which reflects the entire supply chain of transactions resulting from harvest or processing of fish. For example, harvesting of fish will require purchase of a vessel, fuel, food, gear, and many other goods. This spending cycles through the regional economy. The IMPLAN model estimates the total set of such transactions. As a result, one dollar of input often results in more than one dollar of output because the dollar may circulate several times through the economy. The model also estimates employment and labor income, including total wage and salary employment as well as self-employed jobs in a region. It includes both full-time and part-time workers and is measured in annual average jobs. The IMPLAN model estimates economic impacts by census area or region. Data was grouped accordingly when assessing impacts with the IMPLAN model. To determine an accurate estimate of expenditures in Alaska would require research beyond the scope of this study.

Introduction

The Prince William Sound Aquaculture Corporation (PWSAC) is a non-profit organization formed in 1974 by a local area fishermen's group to optimize salmon production in Prince William Sound for the long term well-being of all user groups. PWSAC headquarters are located in Cordova.

The organization operates four remote hatcheries in Prince William Sound and one inland on the Gulkana River. Four species of salmon are currently produced: pink, chum, coho and sockeye. The returning salmon benefit the commercial, sport, personal use and subsistence fishers in the Prince William Sound area and throughout the state.

PWSAC is a private non-profit corporation. It relies on cost recovery revenues and a 2 percent tax on the regional commercial salmon harvest to fund its salmon enhancement activities.

Facilities and Operations

Armin F. Koernig Hatchery

The Armin F. Koernig Hatchery is located about 60 air miles west of Cordova in Sawmill Bay, on Evans Island. The site was originally a salmon cannery, but was converted to become the first PWSAC hatchery in 1975. The facility was built with monies borrowed from the State of Alaska's Fisheries Enhancement Revolving Loan Fund. Six on-site year-round staff and up to 14 seasonal staff operate the facility.

Armin F. Koernig was the only hatchery directly affected by the Exxon Valdez Oil Spill in 1989. Although oil booms surrounded the operation to protect the out-migrating fry, the effects of the spill to Armin F. Koernig and the Sound are still being investigated.

In 2006, Armin F. Koernig Hatchery saw estimated returns of 5.2 million pink salmon and 10.1 million pink salmon in 2005. The five-year average (2002-2006) for the hatchery was 7.0 million pink salmon.

Wally Noerenberg Hatchery

The Wally Noerenberg Hatchery was built in 1985 with monies borrowed from the State of Alaska's Fisheries Enhancement Revolving Loan Fund. It is located approximately 20 miles east of Whittier in Lake Bay on the southern tip of Esther Island, in the South Esther Island State Marine Park. WNH is the largest salmon production facility in North America. Eight on-site year-round staff and 30 seasonal staff operate the facility.

Wally Noerenberg Hatchery returns included an estimated 4.1 million pink, 2.2 million chum salmon and 100,000 coho salmon in 2006. In 2005 returns included 9.1 million pink, 1.9 million chum salmon and 80,000 coho salmon. Over the five-year period, the hatchery averaged returns of 7.8 million pink salmon, 3.2 million chum salmon, and 66,000 coho.

Cannery Creek Hatchery

The Cannery Creek Hatchery was built in 1978 by the Alaska Department of Fish and Game (ADF&G) Fisheries Rehabilitation, Enhancement and Development (FRED) division. PWSAC took

over operational control of the hatchery on July 1, 1988. The site is located on land managed by the U.S. Forest Service, approximately 40 miles east of Whittier, on the eastern shore of Unakwik Inlet in the northern area of Prince William Sound. PWSAC funds and operates the pink salmon facility under a 20-year contract with the ADF&G. Six on-site year-round staff and 14 seasonal staff operate the facility.

Cannery Creek Hatchery pink returns totaled an estimated 2.9 million fish in 2006. In 2005, the hatchery saw record returns of 13.5 million pinks. Over the five-year period from 2002 to 2006, average returns to the hatchery were 5.8 million pink salmon.

Main Bay Hatchery

Main Bay Hatchery is owned by the State of Alaska and situated on land managed by the U.S. Forest Service in Main Bay on the western shore of the sound, approximately 40 miles southwest of Whittier. Main Bay was built in 1981 by ADF&G as a chum salmon hatchery, but switched to a sockeye salmon enhancement program in 1986, becoming the first sockeye salmon smolt-producing hatchery in the world. PWSAC took over operation and management on July 1, 1991. Six on-site year-round staff and 12 seasonal staff operate the facility.

Main Bay Hatchery sockeye returns totaled about 1 million fish in 2006 and 467,000 fish in 2005. The five-year average for the facility was 907,000 returning sockeye.

Gulkana Hatchery

The Gulkana Hatchery is located on the Gulkana River near Paxson, 250 miles northeast of Anchorage and 177 miles south of Fairbanks on the Richardson Highway. PWSAC operates the facility under a contract, which began in 1993 and runs through 2013. The facility is owned by ADF&G and located on Bureau of Land Management land. Four on-site year-round staff and 12 seasonal staff operate the facility.

In 1973, the first streamside incubator box was introduced in an attempt to enhance Copper River sockeye salmon. With a survival rate of 79 percent the first year, significant enhancement opportunities were recognized along with the possibility of future expansion. By 1984, Gulkana became the largest sockeye salmon fry production facility in North America.

Gulkana Hatchery sockeye returns totaled about 272,000 fish 2006 and 261,000 fish in 2005. These numbers were consistent with the five-year average of 265,000 sockeye.

Cordova and Anchorage

PWSAC administration offices are located in Cordova. PWSAC owns a distribution center in Anchorage to consolidate and expedite supplies to and from the remote hatchery sites via Whittier.

Market Discussion

This section is intended as a broad overview of salmon market conditions relative to the species mix of PWSAC-origin salmon. Assessment of market performance and outlook is based on first wholesale value and product-form data published by Alaska Department of Revenue in the Alaska Salmon Price Report (ASPR) series.

PWSAC primarily produces pink and chum salmon and those species are the focus of this discussion. By volume, the five-year average of PWSAC production (2002-2006) is 70 percent pink, 24 percent chum and 6 percent sockeye.

The 2005 and 2006 seasons are unusual relative to the 5-year average of PWSAC salmon production. In 2005, the harvest of PWSAC pink salmon was the second-largest since 1990, totaling 104 million pounds and 85 percent of the total PWSAC harvest. 2006 was another anomaly, with the return of PWSAC pinks at just 40 million pounds, second-lowest in 10 years.

Table 1
Recent Harvest Composition of PWSAC Salmon by Volume

	2002-2006 Avg		2005		2006	
Species	Million lbs.	Percent	Million lbs.	Percent	Million lbs.	Percent
Pink	68.5	70%	104.0	85%	40.6	62%
Chum	23.6	24%	15.3	13%	17.7	27%
Sockeye	5.9	6%	3.1	3%	7.6	11%

Source: ADF&G Salmon Enhancement Annual Reports. Data from 2006 is preliminary.

Chum Salmon

Statewide average chum salmon prices have improved substantially in recent years, from 19 cents per pound in 2003 to 31 cents per pound in 2006. The rebound in chum price is a result of improved market conditions for chum salmon meat products rather than roe.

The previous 10-year peak for Prince William Sound chum price was 2001, when ex-vessel average for the region was 40 cents per pound. This was driven largely by strong first wholesale values for chum roe, at or near $11 per pound.

More recently, chum roe has been selling at statewide average first wholesale prices in the $6 to $7 per pound range and has remained fairly steady at that level from 2003 through 2006. In comparison, first wholesale value of frozen headed and gutted (H&G) chum has risen steadily since 2003, from the mid-40-cent range in 2003 to 97 cents per pound in late 2006. Frozen chum fillets show similar first wholesale value growth, from the $1.30-1.40 range in 2003 and 2004 to $2.00 per pound in 2006.

The improved price for chum salmon meat products are widely considered to be a function of the continued growth in broad consumer demand for salmon, and the ongoing success of efforts to differentiate wild salmon from farmed product.

Pink Salmon

While ex-vessel pink prices from the 2006 season show only a modest improvement (with the statewide average up from $0.10 in 2004 to $0.13 in 2006), recent changes in inventory and growth in first wholesale prices provide more promising signs of recovery for Alaska pink salmon value.

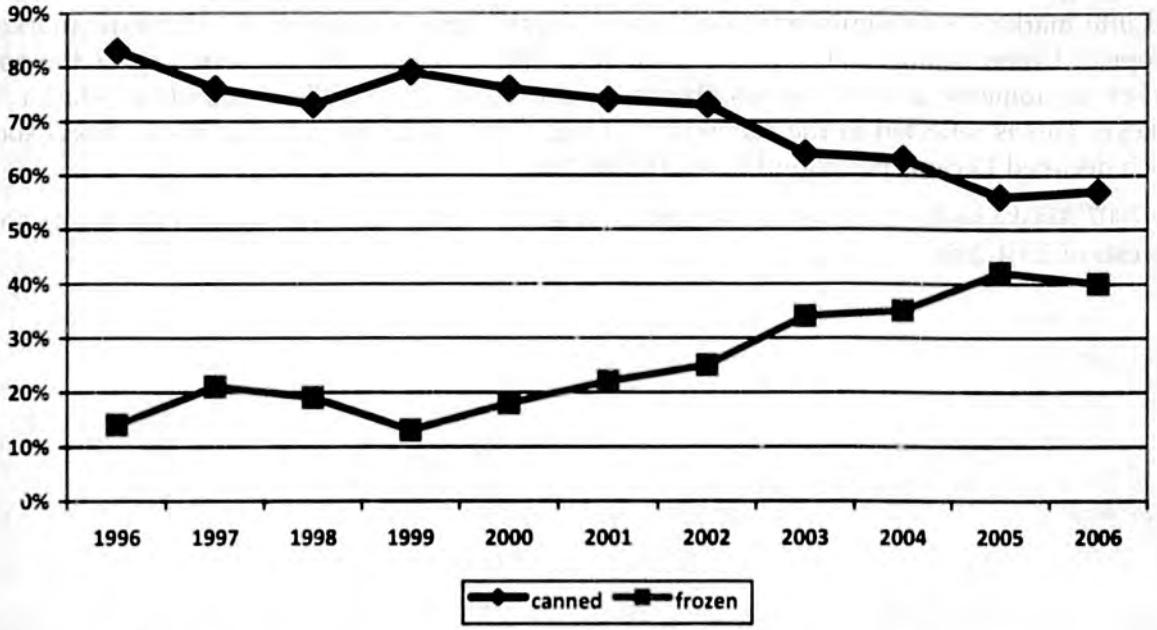
The market outlook for pinks is positive, based on three factors. First, market demand for salmon and for wild salmon in particular continues to grow. Pink salmon makes up nearly half of Alaska salmon harvest tonnage and pink products benefit from the upward trend in demand and salmon commodity value. Second, the recent product-form shift from canned to frozen pink has reduced the supply of raw material for the canned pack, helping balance supply and demand in the canned segment. Third, the below-average pink harvest of 2006 (the smallest in 10 years) heightened demand for frozen pinks and helped "dry up" surplus inventory of canned pinks.

The September 2006 canned pink salmon inventory is estimated at 2.8 million 48-tall case equivalent, a major reduction from the 5-year average of 4 million 48-tall equivalent. Five-year average sales volume of canned pink salmon is 3.2 million cases.

With canned pink inventory significantly below average sales (by 12 percent), the longstanding surplus of canned pink appears to be at an end. This is reflected in the most recent first wholesale case price figures for 48-tall canned pinks, up from the $35 - $42 per case range of the last five years to over $53 per case in the September – December 2006 reporting period.

Frozen H&G pink salmon value has increased substantially, from 41 cents per pound in 2003 to 82 cents per pound in 2006. Per-pound value of frozen pink doubled in four years and sales volume during the same period grew from 36 million pounds to 62 million pounds. The combination of increased price and increased sales volume are clear indicators of genuine growth in demand rather than scarcity-driven pricing.

Figure 1
Pink Salmon Product Form Composition, 1996-2006



Source: ADF&G Commercial Operators Annual Report, Alaska Department of Revenue ASPR.

Sockeye Salmon

Prince William Sound sockeye typically bring the highest ex-vessel value in the state. Average ex-vessel sockeye price for Prince William Sound has increased steadily over the last four years, from $1.10 per pound in 2003 to $1.65 in 2006. In contrast the statewide average price of sockeye changed little during the same period, from 62 cents in 2003 to 67 cents in 2006.

While a significant amount of Prince William Sound (Copper River) sockeye is sold at high specialty-market prices early in the season, a good deal of PWS sockeye is caught and sold in June and early July while other Alaska sockeye fisheries are producing substantial volumes of fish. Buyers of early-season PWS sockeye generally purchase the fish for reasons other than price, but for mid-season and late-season production, PWS sockeye value is more directly linked to the broader Alaska sockeye market.

That market is showing two significant developments that are likely to keep statewide average prices stable or slightly lower in the short term. First, canned salmon makes up about a third of sockeye production and the canned sockeye market appears to be oversupplied. The September 2006 canned sockeye inventory is estimated at 1.4 million 48-tall case equivalent. Five-year average sales volume for the September - August reporting period is 1.1 million 48-tall equivalent. The oversupply will probably weaken ex-vessel price, particularly in Bristol Bay which contributed nearly 70 percent of Alaska sockeye production in 2006.

Second, there was a dramatic reduction in the export of frozen Alaska sockeye to Japan in 2006. In the last three years (2004-2006) Alaska produced between 80 million pounds and 96 million pounds of frozen H&G sockeye. In 2004 and 2005, about three-quarters of that production (74 percent and 80 percent, respectively) was exported to Japan. In 2006 frozen H&G sockeye production was slightly over 80 million pounds but only 30 million pounds (37 percent) was exported to Japan.

The decline in sockeye exports to Japan nearly doubled the supply of frozen Alaska sockeye available to other markets, from 28-30 million pounds in 2004 and 2005 to 53 million pounds in 2006.

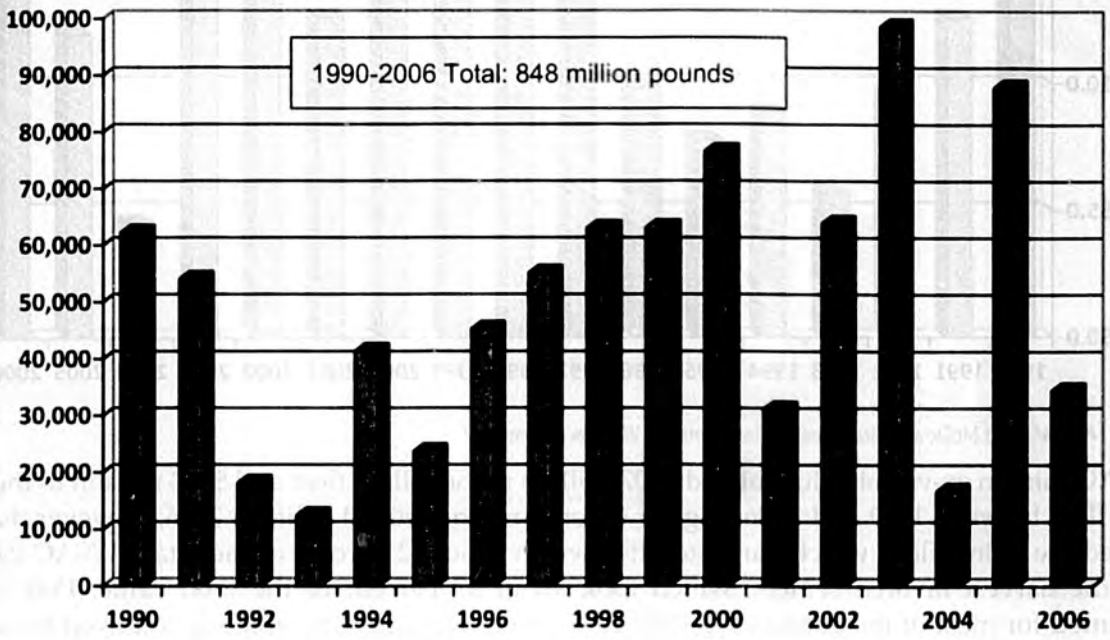
In the long term, this will likely create a favorable situation for Alaska producers as more sockeye is sold into markets with significant salmon consumption growth, namely the domestic market and European Union countries. But in the sho . term, there is potential for softening of the sockeye market, as domestic and EU buyers absorb an additional 20-25 million pounds of Alaska frozen sockeye. This is reflected in the statewide average first wholesale price for frozen H&G sockeye, which declined 17 cents per pound from 2005 to 2006.

The 2007 Alaska sockeye harvest projection is for 41 million fish, consistent with the strong sockeye harvests of 2004-2006.

Commercial Harvest and Ex-Vessel Value

Commercial fishermen harvested 34 million pounds of PWSAC salmon in 2006, and 88 million in 2005. While the 2006 harvest was the third lowest in a decade, the 2005 harvest was the second highest on record. Year-to-year oscillations in harvest are common as pink salmon returns, which make up the majority of PWSAC's fish, tend to cycle over a two-year period. Cumulatively from 1990 to 2006, commercial fishermen harvested 848 million pounds of PWSAC salmon in common property fisheries (see Figure 2). This was an average of 50 million pounds annually. The 2003 harvest was a record at nearly 100 million pounds of fish, with a second record season following in 2005 with 88 million fish.

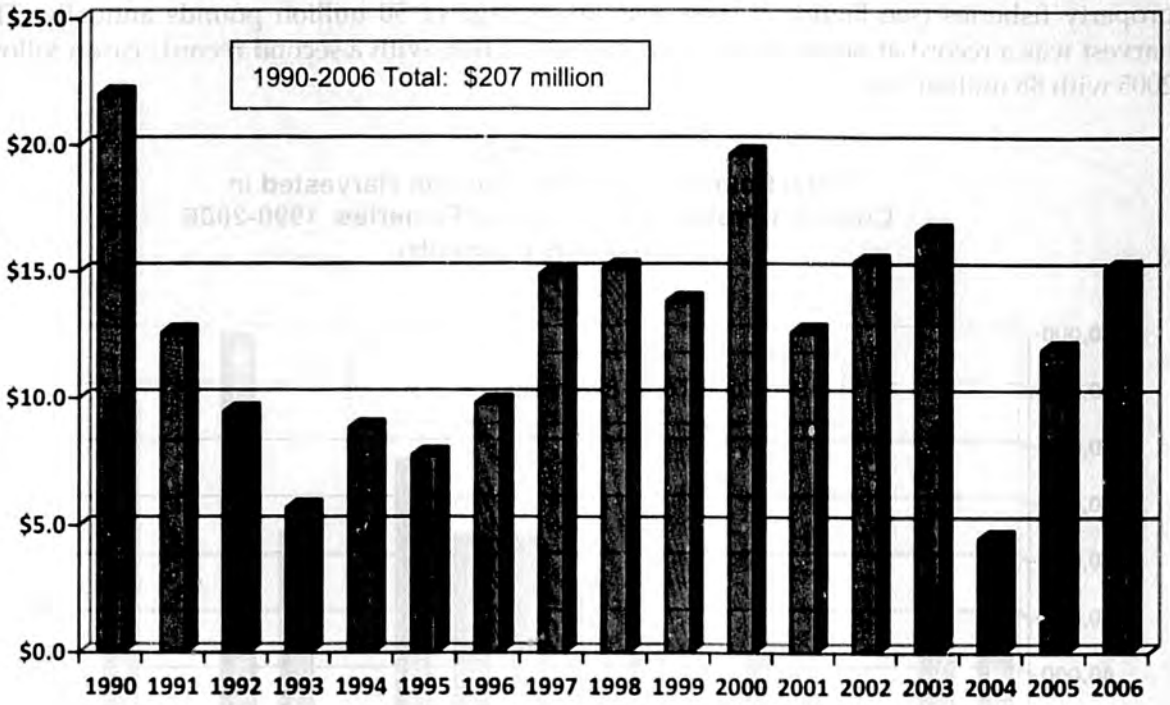
Figure 2
Total Pounds of PWSAC Salmon Harvested in Common Property Commercial Fisheries, 1990-2006
(thousands of pounds)



Source: ADF&G and McDowell Group estimates. 2006 data is preliminary. Number of PWSAC fish provided by Alaska Department of Fish and Game annual enhancement reports; total poundage based on average weight by species by gear type.

The harvest value of the 2006 commercial fishery was relatively high, at $15 million, despite the modest return. This was due largely to a species mix that favored higher valued species, supported by improving ex-vessel prices. Commercial fishermen earned an estimated $207 million in ex-vessel value from PWSAC salmon in common property fisheries from 1990 to 2006, an average of $12 million annually. Averages are pulled down by extremely low earnings in 2004 caused by poor pink salmon returns.

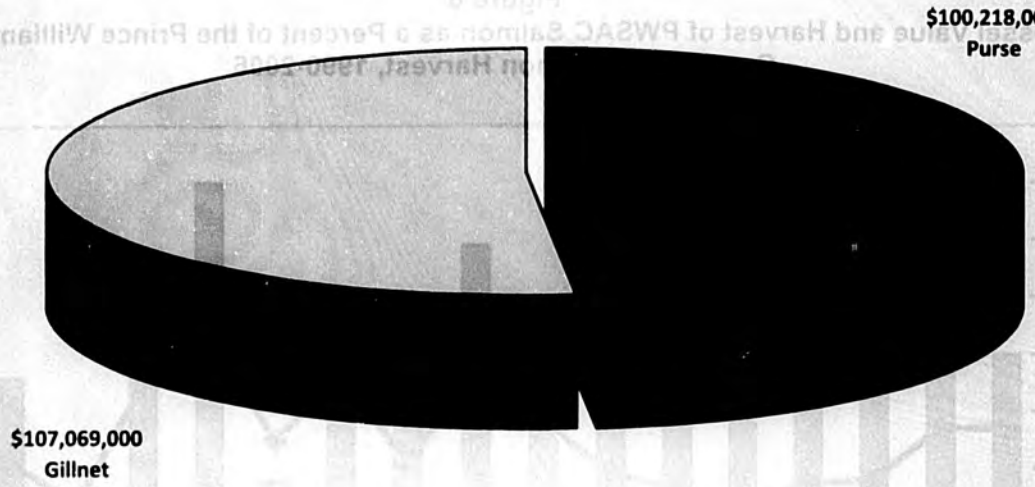
Figure 3
Ex-Vessel Value of Common Property Commercial Harvest of PWSAC Salmon, 1990-2006
(millions of dollars)



Source: ADF&G and McDowell Group estimates. Data for 2006 is preliminary.

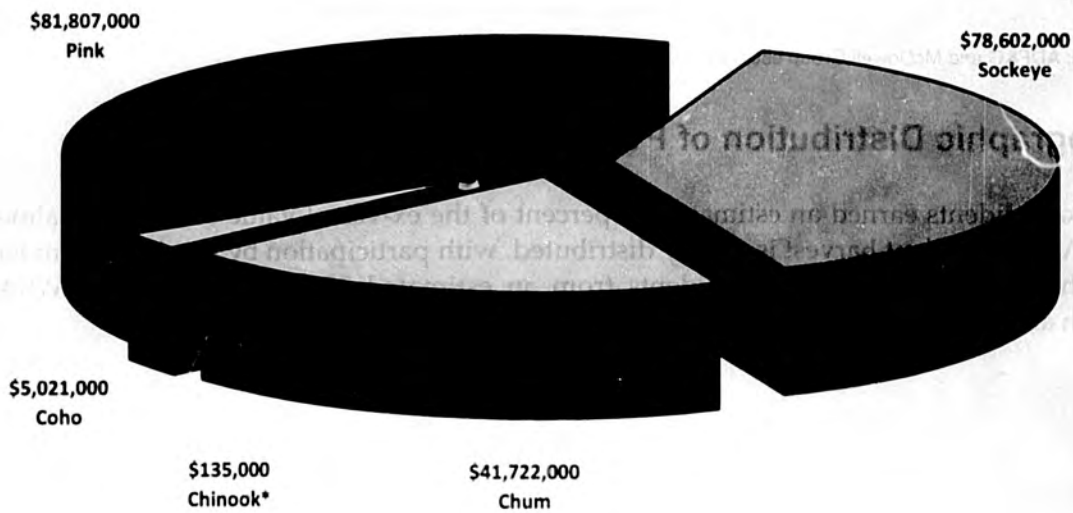
PWSAC salmon ex-vessel value totaled $107 million to the gillnet fleet and $100 million to the purse seine fleet between 1990 and 2006 (Figure 4), or close to a 50/50 split. In 2006, however, harvests favored the gillnet fleet, which harvested fish worth about 62 percent of the total PWSAC value. In 2005 the harvest favored seiners, which took about 57 percent of the total value. Pink salmon accounted for most of the cumulative 1990-2006 ex-vessel value ($81 million), followed by sockeye salmon ($79 million), chum ($42 million), coho ($5 million) and chinook ($135,000) (Figure 5). (PWSAC no longer produces chinook salmon.)

Figure 4
Ex-Vessel Value of PWSAC Salmon
by Gear, 1990-2006 Total



Source: ADF&G and McDowell Group estimates. This data excludes fish used for cost recovery.

Figure 5
Ex-Vessel Value of PWSAC Salmon
by Species, 1990-2006 Total

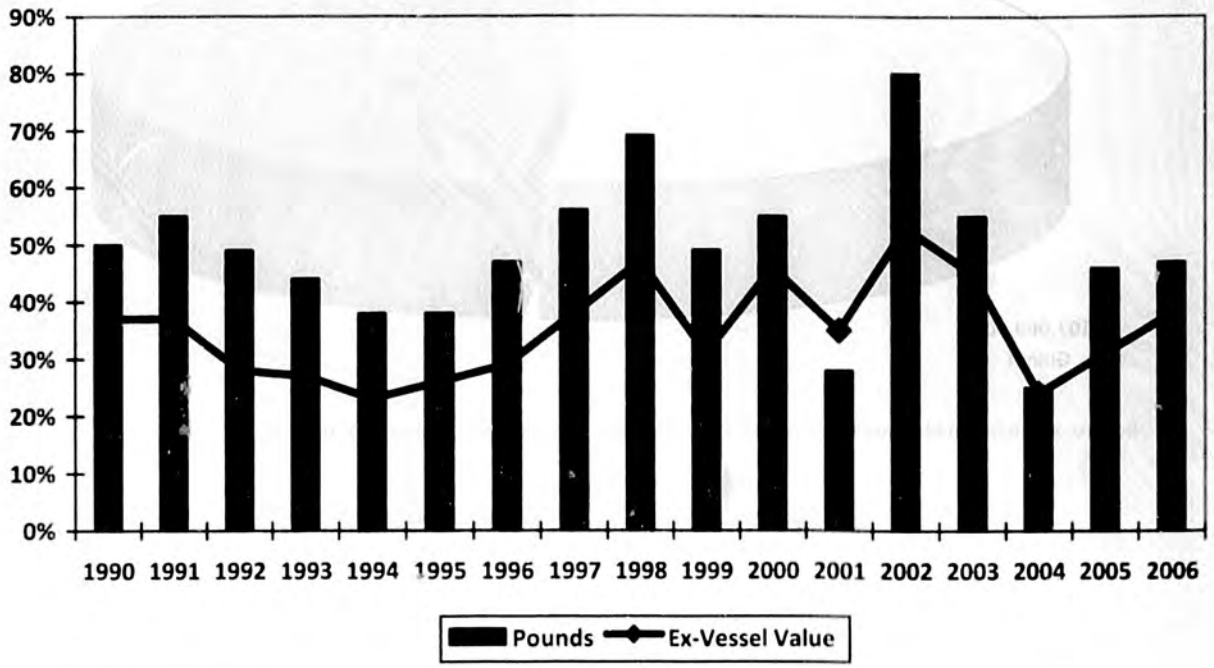


Source: ADF&G and McDowell Group estimates. This data excludes fish used for cost recovery.

* PWSAC no longer produces chinook salmon. Final returns occurred in 2001 and 2002.

PWSAC salmon production is of major importance to Prince William Sound fisheries. Since 1990, PWSAC salmon have accounted for an average of 35 percent of ex-vessel value and 49 percent of volume (Figure 6).

Figure 6
Ex-Vessel Value and Harvest of PWSAC Salmon as a Percent of the Prince William Sound Commercial Salmon Harvest, 1990-2006



Source: ADF&G and McDowell Group estimates.

Geographic Distribution of PWSAC Commercial Harvest Value

Alaska residents earned an estimated 77 percent of the ex-vessel value of PWSAC salmon in 2006. The Alaska resident harvest is widely distributed, with participation by residents from Fairbanks to Dutch Harbor to Hydaburg. Residents from an estimated 38 towns harvested PWSAC salmon worth an estimated $11.7 million in ex-vessel value in 2006.

Table 2
Geographic Distribution of Estimated Ex-vessel Earnings by Fishermen's Place of Residence*
PWSAC Commercial Harvest, 2004-2006

	2004	2005**	2006***
Anchor Point	$44,000	$124,000	$138,000
Anchorage	283,000	666,000	741,000
Bethel	10,000	-	-
Big Lake	10,000	10,000	11,000
Bird Creek	10,000	-	-
Chenega Bay	10,000	10,000	11,000
Chitina	10,000	20,000	22,000
Chugiak	39,000	117,000	130,000
Circle City	21,000	20,000	22,000
Copper Center	21,000	20,000	22,000
Cordova	2,391,000	5,121,000	5,694,000
Delta Junction	46,000	51,000	57,000
Dutch Harbor	10,000	10,000	11,000
Eagle River	24,000	31,000	34,000
Fairbanks	10,000	10,000	11,000
Fort Richardson	10,000	10,000	11,000
Girdwood	88,000	506,000	563,000
Homer	641,000	1,990,000	2,213,000
Hydaburg	-	10,000	11,000
Indian	10,000	10,000	11,000
Juneau	25,000	24,000	27,000
Kasilof	48,000	207,000	230,000
Kenai	23,000	113,000	126,000
Kodiak	21,000	20,000	22,000
Nikiski	21,000	-	-
Ninilchik	21,000	10,000	11,000
Palmer	75,000	61,000	68,000
Sand Point	10,000	10,000	11,000
Seldovia	-	10,000	11,000
Seward	72,000	91,000	101,000
Soldotna	31,000	20,000	22,000
Tatitlek	31,000	29,000	32,000
Tok	-	10,000	11,000
Valdez	178,000	945,000	1,051,000
Wasilla	88,000	231,000	257,000
Willow	21,000	20,000	22,000
Grand Total	**$ 4,353,000**	**$10,537,000**	**$11,716,000**

Source: CFEC and McDowell Group estimates. Totals may not be exact due to rounding.

* Data for 2005 is preliminary.

**Data for some communities is unavailable due to confidentiality. Estimates for these communities are based on average Alaska resident earnings, by permit type, for the preceding three years.

*** Ex-vessel earnings data are not yet available on a community level for 2006. Earnings per community based on total ex-vessel estimates for 2006 and are assumed to be proportionate to those in 2005.

Cordova residents harvested fish worth an estimated 55 percent of the total value of the PWSAC harvest by Alaska residents ($6.5 million), followed by residents of Homer (14 percent, $1.7 million), Anchorage and Valdez (7 and 6 percent, respectively; $827,000 and $688,000).

The estimated economic impacts from Alaska resident PWSAC-related ex-vessel income of $11.7 million were $22.8 million in total output, including $18.7 million in labor income and 345 jobs. Total resident and non-resident ex-vessel earnings of $15.2 million resulted in $29.5 million in total output, including $24.2 million in labor income and 445 jobs (Table 3).

Table 3
Regional Economic Output, Including Jobs and Payroll from Commercial Ex-Vessel Value of PWSAC Salmon, 2006

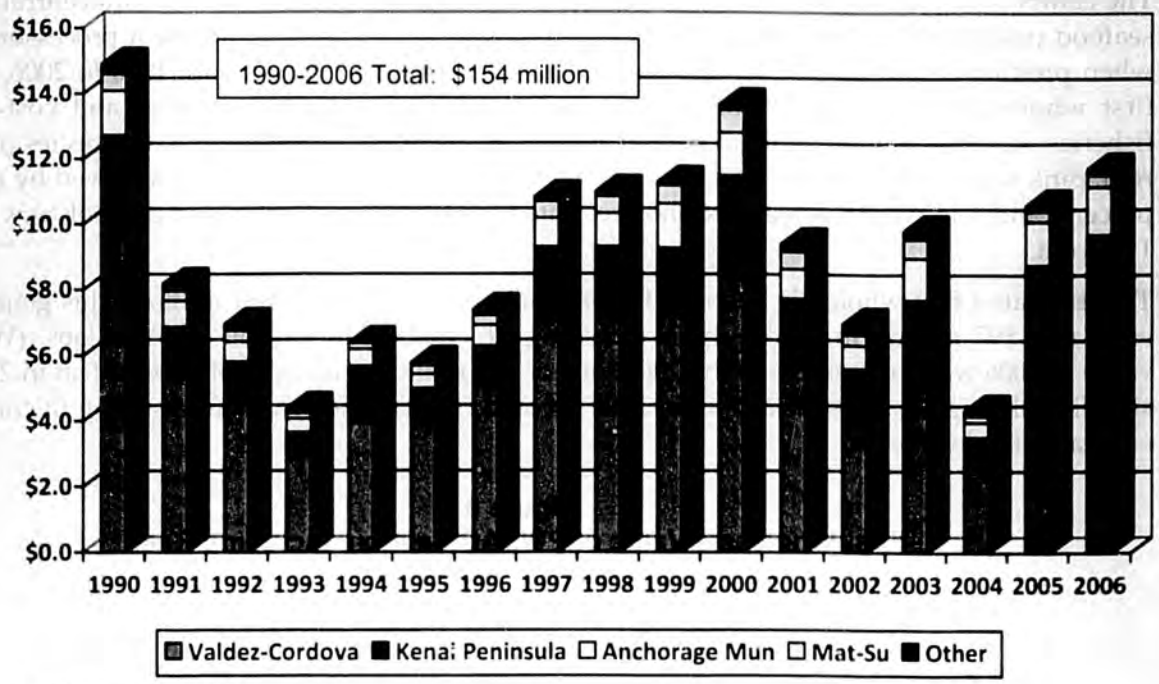
Sector	Ex-Vessel Income	Economic Output	Jobs	Payroll
Alaska Resident	$11,700,000	$22,800,000	345	18,700,000
Resident and Non-Resident	$15,200,000	$29,500,000	445	NA*

Source: CFEC and McDowell Group estimates.
* This analysis focuses on direct and indirect payroll generated in Alaska. It is assumed that a significant portion of non-resident income is spent outside of Alaska. Therefore the payroll effects of that spending are not considered in this analysis.

Regional Economic Impacts of PWSAC Commercial Salmon Harvest, 1990 to 2006 Total

- Fishermen from the Valdez-Cordova area harvested $7 million of PWSAC salmon in 2006, and $6 million in 2005. Total harvests from 1990 to 2006 were worth $96 million, an average of $5.6 million per year.
- Kenai Peninsula fishermen earned close to $3 million in both 2005 and 2006. The total value from 1990 to 2006 was $33 million, for an annual average of $1.9 million.
- Anchorage fishermen earned $1.5 million in 2006 and $1.3 million in 2005. The 1990 to 2006 total was $16 million, for an annual average of $916,000.
- Matanuska-Susitna fishermen earned $320,000 in 2005 and $360,000 in 2006, with 1995-2006 total of $7 million and an annual average of nearly $398,000 (Figure 7).

Figure 7
Ex-Vessel Income from PWSAC Salmon by Alaska-Resident Permit Holder, 1990 to 2006
(millions of dollars)



Source: CFEC, ADF&G and McDowell Group estimates.

- PWSAC salmon contributed $6.8 million to Valdez-Cordova commercial permit holder ex-vessel income in 2006, resulting in an estimated economic output of $9.9 million, including 120 jobs and $8.2 million in labor income.
- Kenai Peninsula permit holders earned $2.9 million in ex-vessel value from PWSAC salmon in 2006, resulting in $4.9 million in economic output, including 90 jobs and $3.5 million in labor income.
- Anchorage permit holders earned $1.5 million in ex-vessel value from PWSAC salmon in 2006, resulting in $2.6 million in economic output, including 60 jobs and $2.1 million in labor income.
- Statewide, resident permit holders earned $11.7 million in ex-vessel value from PWSAC salmon in 2006, resulting in $22.8 million in economic output, including 345 jobs and $18.7 million in labor income.

Table 4
Regional Economic Output, Including Jobs and Payroll, from Commercial Ex-Vessel Value of PWSAC Salmon, 2006

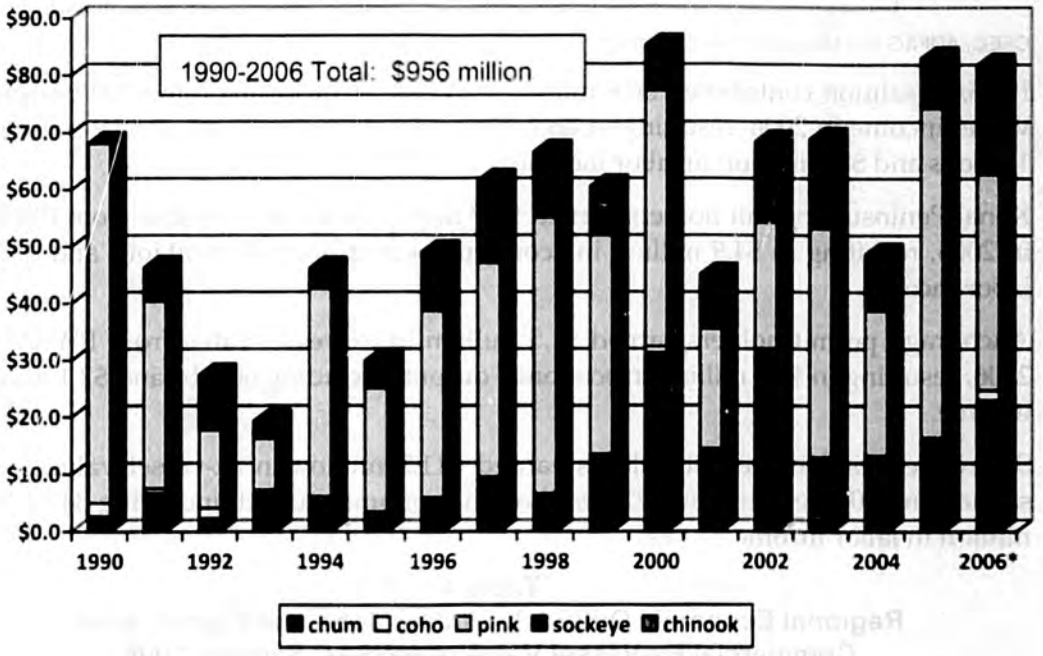
Census Area	2006 Ex-Vessel Income	Economic Output	Jobs	Payroll
Valdez-Cordova	$6,789,000	$9,946,000	120	$8,195,000
Kenai Peninsula	$2,913,000	$4,897,000	90	$3,472,000
Anchorage	$1,475,000	$2,621,000	60	$2,105,000
Statewide	$11,716,000	$22,846,000	345	$18,734,000

Source: CFEC and McDowell Group estimates.

The commercial harvest of PWSAC salmon generates significant benefits for Southcentral Alaska's seafood processors, as indicated by the first wholesale value (i.e., the income a processor receives when product is sold outside its affiliate network for the first time). From 1990 to 2006, the total first wholesale value of PWSAC salmon and roe harvested in commercial and cost-recovery fisheries was $956 million, with an annual average value of about $56 million. By species (including roe), pink salmon led with the largest share of wholesale value (61 percent), followed by chum (21 percent) and sockeye (16 percent). Coho accounted for 1 percent of value and chinook was less than 1 percent.

The estimated first wholesale value of PWSAC salmon in 2006 was $81 million. This generated an estimated $95 million in total output, including $17 million in payroll and 305 jobs. (Wholesale value in 2006 was comparable to the 2005 total of $83 million. Though volumes of fish in 2005 were significantly higher, the species mix in 2006 favored higher value salmon, resulting in comparable estimated total value.)

Figure 8
First Wholesale Value of PWSAC Salmon, Including Roe, by Species, 1990-2006
(millions of dollars)



Source: ADF&G and McDowell Group estimates. Excludes confidential values

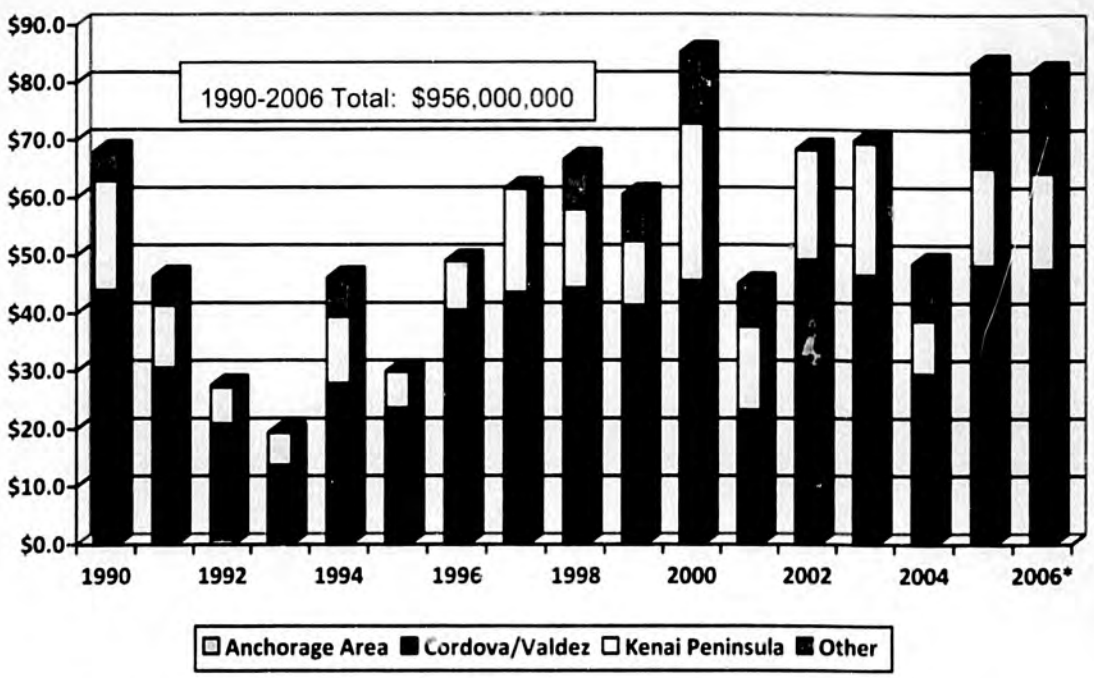
Note: Wholesale value for 2006 is based on the proportion of first wholesale value to ex-vessel value in 2005.

Regional Impacts of PWSAC Salmon Processing

PWSAC salmon was processed by as many as 17 different Alaska processors in 2005 (the most recent year for which data is available). Processors were grouped by geographic area to estimate regional impacts. As would be expected, most PWSAC wholesale value is realized in the Cordova/Valdez area. This is followed by the Kenai Peninsula. It should be noted that, while salmon from Prince William Sound are known to be processed in Anchorage, confidentiality restrictions limit the availability of data in some years, resulting in Anchorage's exclusion from some years' estimates.[4]

From 1990 to 2006, first wholesale value for Cordova/Valdez area processors totaled about $618 million, followed by $237 million to Kenai processors, and $83 million to processors elsewhere in the state (Figure 9).

Figure 9
First Wholesale Value of PWSAC Salmon and Roe by Processor Region, 1990-2006
(millions of dollars)



Source: ADF&G and McDowell Group estimates. Excludes confidential values.

Notes: Wholesale value for 2006 is based on the proportion of first wholesale value to ex-vessel value in 2005.

Data on Anchorage-area processing activity is frequently subject to confidentiality restrictions due to the limited number of processors handling Prince William Sound fish in the area.

[4] The Alaska Department of Fish and Game suppresses data when fewer than three companies report value information (in previous year this threshold has been fewer than four reporting). This protects the confidential data of individual firms. However, in some cases it can result in limiting the availability of data.

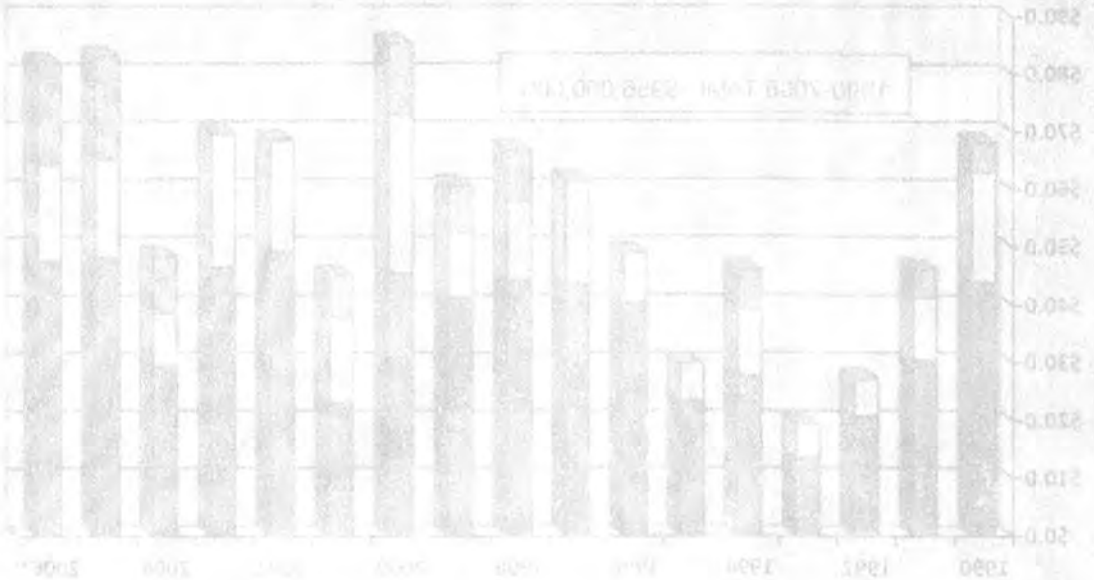
Of the estimated $82 million in first wholesale value of PWSAC salmon to Alaska processors in 2006, $48 million went to Cordova/Valdez processors, $17 million to Kenai processors, and $18 million to processors elsewhere in the state. Processing of PWSAC fish generated an estimated 115 jobs in Cordova/Valdez, 55 jobs on the Kenai Peninsula, and 135 jobs elsewhere in the state (Table 5).

Table 5
Economic Output, Including Jobs and Payroll, from Processing of the Commercial Harvest of PWSAC salmon, 2006

Region	First Wholesale Value	Economic Output	Jobs	Payroll
Cordova/Valdez	$47,586,000	$48,395,000	115	$3,298,000
Kenai Peninsula	$16,813,000	$19,213,000	55	$2,797,000
Other Alaska Towns	$17,506,000	$26,998,000	135	$11,347,000
Statewide	$81,905,000	$94,606,000	305	$17,441,000

Source: ADF&G and McDowell Group estimates. Excludes confidential values.

Economic output totals do not include output associated with ex-vessel value.



Alaskans travel from around the state to participate in the Copper River dipnet personal use and fishwheel subsistence fisheries. PWSAC salmon play an important role in these fisheries. Alaskans harvested 316,000 PWSAC-origin sockeye from 1999 to 2005. In 2005 alone an estimated 70,900 PWSAC sockeye were taken in these fisheries. Data for 2006 is not yet available. Residents of Fairbanks harvested more of these fish than residents of any other community, followed by Anchorage, Wasilla, Copper Center, and North Pole. Residents of Palmer, Glennallen, and Eagle River also harvested large numbers of PWSAC sockeye in these fisheries.

Table 6
Number of PWSAC Sockeye Harvest, by Fishermen's Place of Residence, Copper River Personal Use and Subsistence Fishery, 1999-2005

City	1999	2000	2001	2002	2003	2004	2005	Grand Total
Anchor Point	-	-	-	-	-	19	104	123
Anchorage	9,388	4,896	5,071	18,190	9,634	4,525	12,593	64,297
Anderson	19	72	35	89	33	-	144	392
Barrow	76	25	35	95	90	39	134	494
Big Lake	219	84	133	387	252	91	167	1,333
Cantwell	46	19	25	20	16	4	15	145
Central	9	30	6	39	40	9	45	178
Chickaloon	171	38	37	96	90	34	271	737
Chistochina	-	-	-	-	-	271	186	457
Chitina	340	179	188	982	932	334	758	3,713
Chugiak	681	406	392	1,178	770	316	832	4,575
Clear	28	13	27	51	9	60	138	326
Cooper Landing	25	28	18	162	52	26	99	410
Copper Center	2,209	1,253	1,255	6,466	4,174	1,308	4,686	21,351
Cordova	3	9	49	272	28	20	44	425
Delta	1,288	762	674	2,597	1,672	777	2,973	10,743
Denali	27	18	14	9	15	6	24	113
Dot Lake	10	8	12	24	51	-	30	135
Eagle River	2,352	868	1,149	4,278	2,063	970	3,294	14,974
Eielson	606	402	264	848	395	173	531	3,219
Elmendorf AFB	103	70	73	139	61	29	52	527
Ester	176	92	104	451	333	192	521	1,869
Fairbanks	7,333	4,614	3,829	18,268	9,605	5,367	17,031	66,047
Fort Richardson	72	50	53	206	80	21	90	572
Fort Wainwright	390	190	151	694	217	156	548	2,346
Gakona	834	888	768	1,829	1,234	496	2,193	8,242
Girdwood	101	54	44	358	173	78	141	949
Glennallen	2,254	1,100	944	5,175	2,652	688	2,964	15,777
Gulkana	-	-	-	-	-	127	-	127
Healy	117	75	90	184	81	72	264	883
Homer	69	32	22	54	55	10	87	329
Houston	43	19	36	58		9	8	173

Table 6 (continued)
Number of PWSAC Sockeye Harvest, by Fishermen's Place of Residence, Copper River Personal Use and Subsistence Fishery, 1999-2005

City	1999	2000	2001	2002	2003	2004	2005	Grand Total
Indian	5	10	11	15	10	10	33	94
Juneau	45	11	17	44	49	14	55	235
Kenai	30	21	7	33	16	7	7	121
Kenny Lake	-	-	-	-	-	334	-	334
Kodiak	6	10	15	37	48	7	10	133
Kotzebue	4	-	1	30	11	-	5	51
McCarthy	38	1	1	67	-	89	5	201
Nenana	66	25	64	383	207	-	-	745
Ninilchik	17	19	15	37	18	1	20	127
Nome	10	7	7	13	30	-	10	77
North Pole	2,312	1,287	1,243	5,223	3,026	1,636	5,459	20,186
Northway	150	40	29	-	100	70	429	818
Palmer	2,221	1,209	1,211	5,232	2,466	-	-	12,339
Paxson	14	7	7	15	93	-	-	136
Salcha	223	101	89	412	303	220	565	1,913
Seward	35	17	12	49	44	8	59	224
Slana	190	107	138	259	309	340	454	1,797
Soldotna	53	30	33	80	44	16	20	276
Sutton	163	49	50	342	131	95	242	1,072
Talkeetna	83	42	66	140	85	30	173	619
Tanacross	-	-	-	-	-	-	186	186
Tazlina	-	-	-	-	-	282	-	282
Tok	736	448	367	1,075	822	657	1,865	5,970
Trapper Creek	30	-	2	-	-	6	7	45
Two Rivers	61	32	55	198	114	42	144	646
Valdez	1,182	769	744	3,010	1,271	814	2,224	10,014
Wasilla	3,246	2,045	1,853	8,067	4,105	2,106	7,647	29,069
Willow	164	121	75	378	187	69	102	925
Willow	-	-	-	-	-	-	-	171
Other Alaska[2]	185	83	59	273	188	107	243	1,138
Grand Total	**40,300**	**22,800**	**21,700**	**88,600**	**48,500**	**23,200**	**70,900**	**316,000**

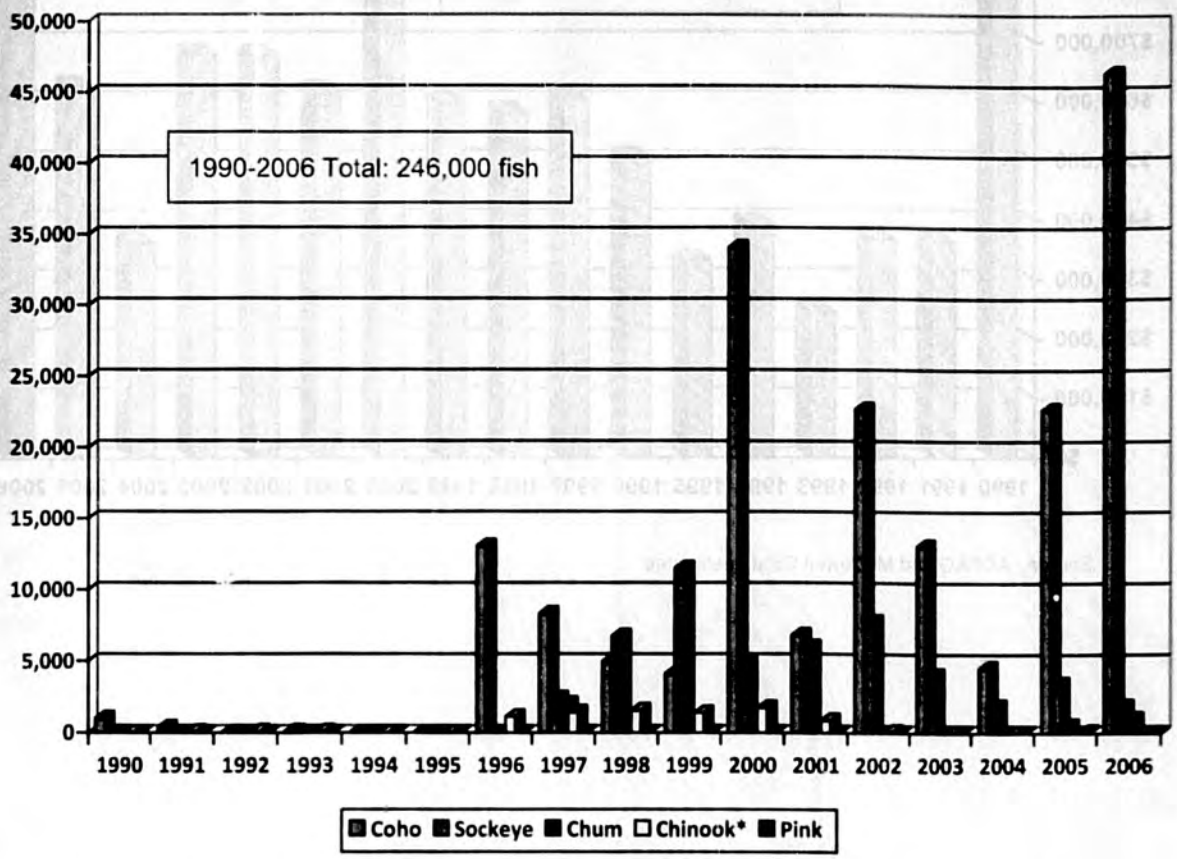
Source: ADF&G, McDowell Group estimates.

1. Reporting requirements were changed in 2000. Prior to 2000, a punch card to record each salmon harvested was required to be turned into ADF&G following each trip. In 2000, harvesters recorded the date and number of fish on a form, and did not have to submit the form until the end of the season.
2. "Other Alaska" includes communities whose residents harvested 50 fish or fewer from 1999 to 2005.

Recreational Harvest of PWSAC Salmon

PWSAC salmon play an important role in the Prince William Sound sport fisheries, with 49,000 fish harvested in sport fisheries in 2006 and 27,000 in 2005. Overall, PWSAC contributed 246,000 fish to the sport fishery from 1990-2006 (Figure 10). Three quarters of the fish harvested were coho, followed by sockeye (20 percent). Others contributed a total of about 5 percent of the fish. The 2006 all-species harvest of 49,000 fish generated estimated direct expenditures of $419,000. The estimated economic impacts of this activity are $524,000 in total economic output, including $262,000 in payroll and 13 jobs.

Figure 10
Recreational Harvest of PWSAC Salmon, 1990-2006
(in numbers of fish)



Source: ADF&G and McDowell Group estimates.

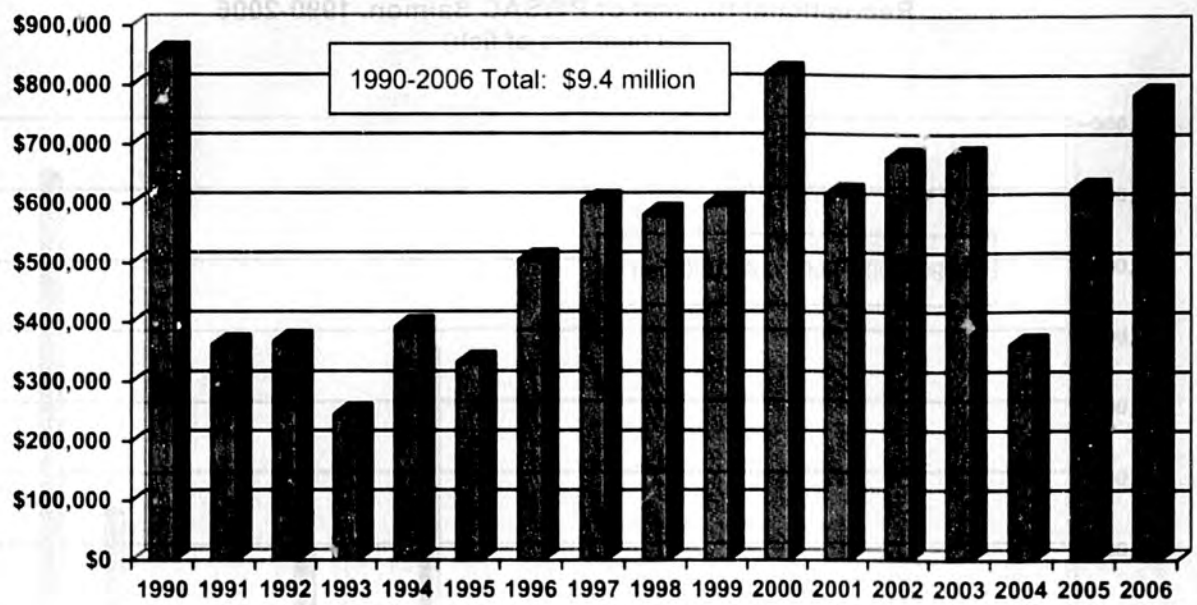
* PWSAC no longer produces chinook salmon. Final returns for the species occurred in 2002.

The PWSAC salmon sport harvest is spread over a wide area, including the entire Prince William Sound area and the Gulkana River in the Copper River drainage.

As with all salmon commercially harvested and processed in Prince William Sound, PWSAC salmon are subject to a 3 percent State of Alaska Fisheries Business Tax, which is deposited into the state's General Fund.

From 1990 to 2006, Prince William Sound commercial salmon fishermen paid an estimated $22 million in total fisheries business tax. The tax on PWSAC salmon accounted for about $9 million of this total value, including fisheries business taxes paid on PWSAC cost recovery fish (Figure 11). Estimated receipts in 2006 were $780,000; in 2005 they were $620,000.

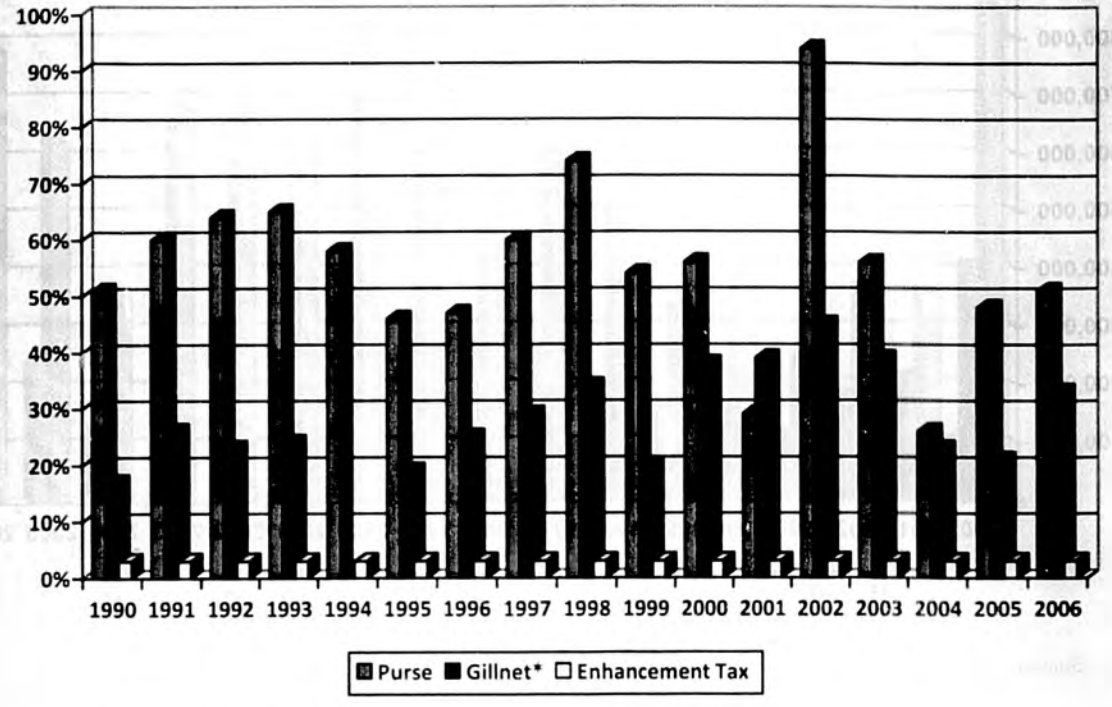
Figure 11
State Fisheries Business Taxes Paid on PWSAC Fish, 1990 to 2006



Source: ADF&G and McDowell Group estimates.

Commercial fishermen fishing in Prince William Sound also pay a 2 percent Salmon Enhancement Tax to fund PWSAC operations. The return on this investment is substantial. From 1990 to 2006, purse seiners derived 53 percent of their incomes from PWSAC fish. Gillnetters derived 27 percent of their incomes from PWSAC fish (Figure 12).

Figure 12
Percent of Ex-vessel Value for Seine and Gillnet Harvesters from PWSAC Salmon Versus the Salmon Enhancement Tax Rate
1990 to 2006

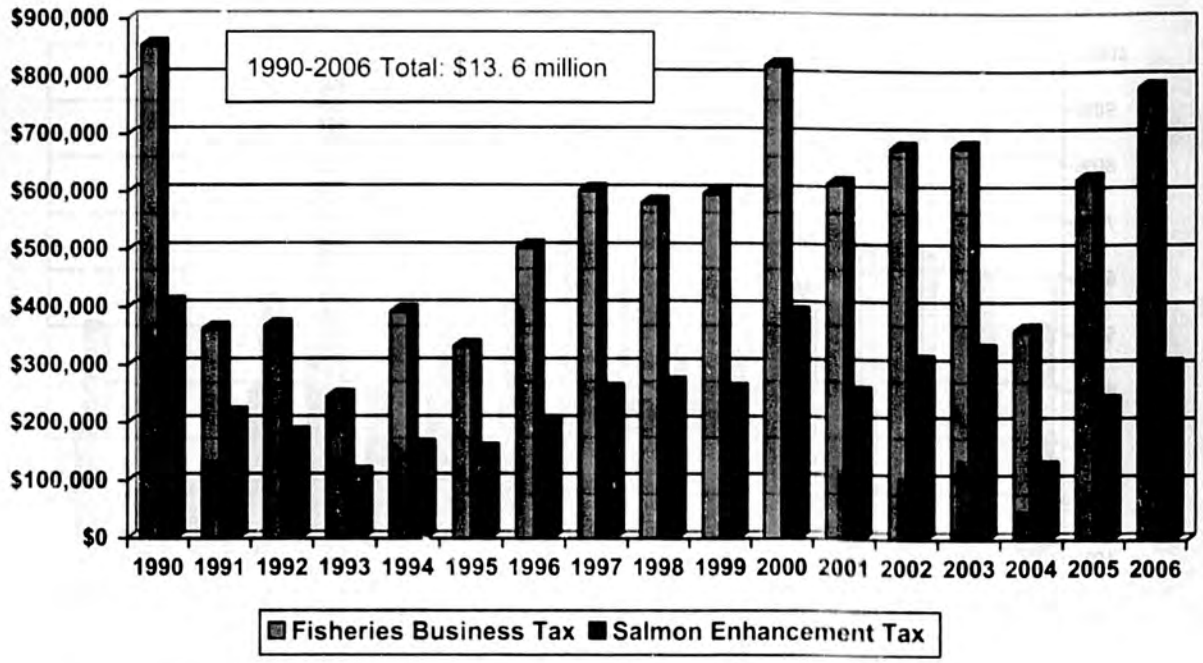


Source: ADF&G and McDowell Group estimates.

* Gillnet includes setnet and drift gillnet gear.

In 2006, commercial fishermen contributed $300,000 in enhancement taxes in Prince William Sound, and $239,000 in 2005. From 1990 to 2006, contributions totaled $12 million in enhancement taxes. Over the same period, PWSAC fish contributed $207 million in ex-vessel value to the commercial fishery, a return to fishermen of $17 for every $1 of tax paid (Figure 13).

Figure 13
Salmon Enhancement and Fisheries Business Taxes Paid on PWSAC Fish, 1990 to 2006



Source: ADF&G and McDowell Group estimates.

The PWSAC organization has substantial impacts on the regional economy. PWSAC directly creates 72 full-time equivalent jobs. Payroll and in-state operating expenses totaled just under $3.5 million in calendar year 2006, plus out-of-state spending for fish feed, employee health insurance and miscellaneous equipment of about $2.5 million.

In calendar year 2006, PWSAC spending was spread out among 19 Alaska communities, with purchasing the highest in Juneau, Anchorage, Valdez, Cordova and Whittier (Table 7).

Table 7
PWSAC Spending by Community, 2006

Community	Expenditures
Juneau	$1,774,900
Anchorage	747,200
Valdez	442,700
Cordova	247,900
Whittier	136,900
Seward	28,700
Fairbanks	25,500
Glennallen	24,000
Gakona	15,400
Palmer	15,100
Wasilla	7,700
Eagle River	5,100
Anchor Point	4,600
Homer	2,800
Delta Junction	2,600
Girdwood	1,700
Chenega Bay	1,600
Sitka	600
Bethel	< $100

Source: PWSAC and McDowell Group estimates.

Total economic impact of the spending includes approximately $17 million in total output, 190 jobs and $5.7 million in labor income.

A Preliminary Look at the 2007 Season

An Addendum to

Economic Impacts of the Prince William Sound Aquaculture Corporation: 2006 Update

The Prince William Sound Aquaculture Corporation (PWSAC) regularly commissions comprehensive studies of the economic impact of its activities on the economy of the Prince William Sound region and other areas of Alaska. These reports, typically completed every two to three years, provide information on harvests of PWSAC-origin salmon by the commercial salmon fleet, by the sport fish sector, and by personal use and subsistence harvesters. They also provide information on the market conditions that contributed to the value of the commercial fishery, and the salmon processing activity and impacts that the harvests supported.

In early 2007, PWSAC commissioned a report to examine the cumulative impacts through the 2006 harvest season. Throughout Alaska, salmon harvests that rely heavily on pink salmon experience biennial abundance cycles, with every second year typically yielding a more significant return. Despite being a lower cycle year, the 2006 PWSAC impacts for commercial harvesters were estimated at $15 million to harvesters, with an estimated wholesale value in excess of $81 million. The total economic output in Alaska was estimated at $135 million.

By contrast, 2007 was a year of significant abundance. Pink and chum fish returning to PWSAC hatcheries approached all-time records. Paired with strong market conditions for salmon, and pink salmon in particular, the resulting impact of the fishery in Alaska was likely significantly higher.

The Alaska Department of Fish and Game and the Commercial Fisheries Entry Commission continue to compile the complete harvest and value data from the season, and key data sets will not be available until well into 2008. While the complete economic impact methodology can not be replicated in advance of the full data availability, in-season harvest data and up-to-date market information provide a basis for considering the magnitude of the fisheries' 2007 value, as compared to the 2006 season. The complete 2006 impact analysis provides more specific information on the manner in which PWSAC's impacts flow to communities and regions, and examines product form and species trends for the seafood product in greater detail.

Prince William Sound is home to some of the most significant pink and chum fisheries in the state of Alaska. Productive salmon hatcheries and abundant wild stocks contribute to a diverse fishery with participation by commercial seiners, drift gillnetters and setnetters, as well as sport, personal use, and subsistence harvesters.

In 2007, the region enjoyed near-record harvests in multiple species, and the third largest catch overall in the history of Prince William Sound. Pink salmon typically experience a biennial peak in returns; in Prince William Sound, this peak occurs in odd-numbered years. The 2007 peak pink harvest also corresponded with a strong chum salmon return and a strong sockeye return.

Fish produced in the PWSAC hatchery facilities around Prince William Sound contribute a significant percentage of the total harvest of salmon in the region. In a given year, PWSAC production can range from one-quarter to one-half of the commercial harvest. The organization's hatcheries are spread throughout western Prince William Sound, with some additional sockeye capacity in hatcheries on the Copper River system. Release locations are dispersed through the region.

Commercial and Sport Harvests of PWSAC Salmon

All three commercial salmon gear groups in Prince William Sound (drift gillnet, setnet, and seine) benefit from PWSAC production, with gear groups tending to focus on different species due to their particular harvesting strengths and the timing of the returns. Generally, the seine fleet harvests significant amounts of PWSAC pink and chum salmon, while the drift gillnet fleet is more focused on sockeye runs.

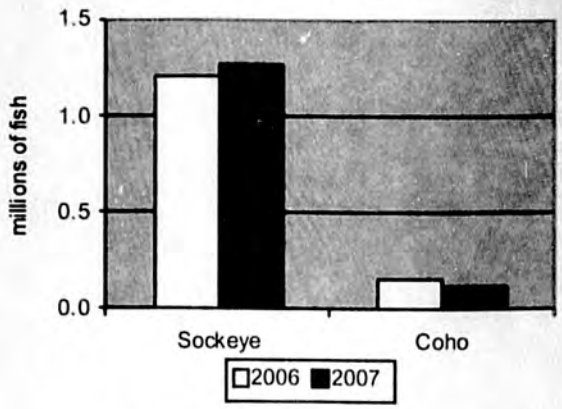
In 2007, commercial harvests of PWSAC-origin pink salmon approached 22 million fish, or nearly 74 million pounds. It was the third-highest harvest of PWSAC pink salmon on record (following 2003 and 2005). The harvest of PWSAC chum salmon was also the third-highest on record, at 2.5 million fish, or approximately 17 million pounds. Sockeye harvests were also notable, at 913,000 fish, or 5.7 million pounds.

Sport harvesters pulled 24,000 PWSAC coho from the waters and a smaller number of sockeye and coho. Personal use and subsistence harvesters took more than 34,000 sockeye salmon in systems supported by PWSAC production. These fish are primarily harvested in Interior river systems linked to the Copper River.

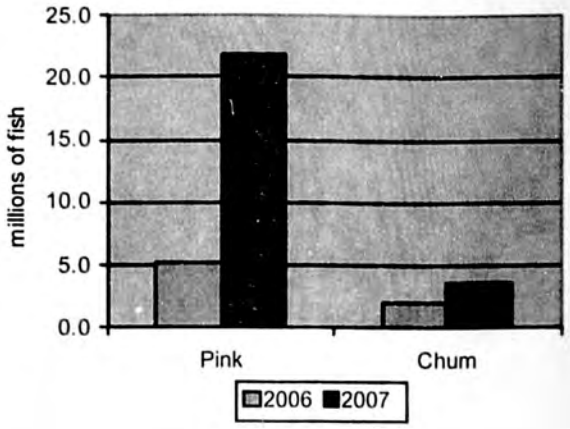
Value of the Commercial Harvest

Based on preliminary figures, the estimated ex-vessel value of the 2007 PWSAC-origin harvest was $26 million. This amount, paid to fishermen upon delivery of their catch, included $11.8 million for pink salmon, $8.5 million for sockeye salmon, and $5.2 million for chum. The balance was for coho.

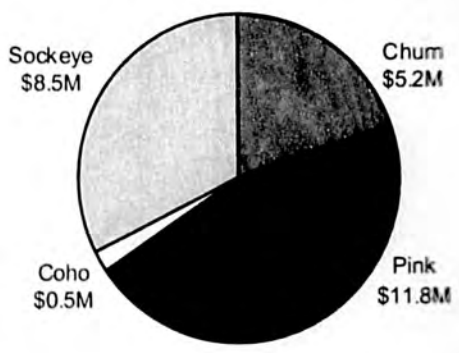
Total Returns, Sockeye & Coho, 2006-07



Total Returns, Pink & Chum, 2006-07



Ex-vessel Value, by Species, 2007



The ex-vessel value paid for a vessel's catch must cover all of the operating expenses of the harvesting activity, including the costs of crew (generally paid to crew members as a "share," or percentage of the value of the catch), fuel, food, gear, maintenance, vessel upgrades, insurance, and any other fixed or variable costs associated with the fishing operation. While datasets maintained by the State of Alaska reflect the ex-vessel value per permit holder, it is important to recognize that the entirety of the ex-vessel value does not accrue directly to the individual. Profits by individual harvester are not available.

However to the extent that provisioning, maintenance repair work, and other vessel support expenditures occur in Alaska, those dollars can be expected to flow through the Alaska economy.

Differences in Hatchery Ownership: PWSAC and the State of Alaska

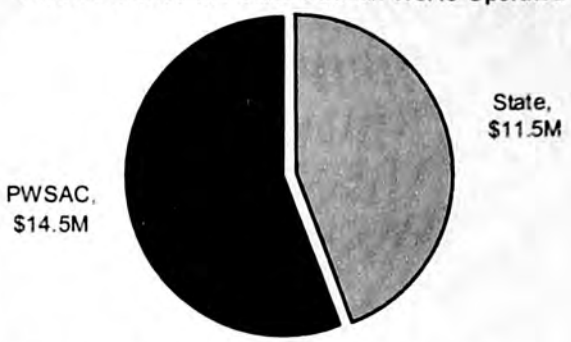
PWSAC owns and operates two hatcheries in Prince William Sound: the Armin F. Koernig Hatchery, located in the southwest corner of the Sound, near Montague Strait; and the Wally Noerenberg Hatchery, on Esther Island, near Whittier.

In addition, the State of Alaska contracts with PWSAC for operation of three State-owned hatcheries in the region: the Cannery Creek Hatchery in the northern part of Prince William Sound; the Main Bay Hatchery, southeast of Whittier; and the Gulkana Hatcheries, located inland on the Copper River. PWSAC has had contracts for operation of these hatcheries for as long as 20 years.

Production at the two PWSAC-owned hatcheries includes pink salmon at Armin F. Koernig, and pink, chum and coho salmon at Wally Noerenberg. In 2007, 100 percent of the organization's chum and coho salmon came from these two facilities, as well as three-quarters of the pink production.

The state-owned facilities account for all of the organization's sockeye production, with about 90 percent of the 2007 sockeye return originating from the Main Bay Hatchery outside Whittier, and the balance from the Gulkana Hatcheries on the Copper River. In addition, pink salmon from the Cannery Creek facility in northwestern Prince William Sound contributed about one-quarter of PWSAC's total pink return in 2007.

Total 2007 Ex-Vessel Value for PWSAC Hatcheries
PWSAC-Owned and State-Owned/PWSAC-Operated



The Case of Cannery Creek Hatchery

PWSAC's operation of the Cannery Creek Hatchery is the longest-running of its management relationships with the State of Alaska. Since assuming operational control of the hatchery in 1988, PWSAC has overseen significant changes to the hatchery, and the successful production and return of 108 million salmon.

When PWSAC assumed control of Cannery Creek Hatchery, it implemented production increases and infrastructure developments. First, the organization roughly doubled its egg-take for pink salmon. At the same time, the infrastructure at the remote hatchery facility was improved, with an addition to

the bunkhouse and the construction of a duplex housing unit. These accommodated the increased staff size necessary to handle the higher production levels. In 1990, chum salmon production at the facility was discontinued, allowing the organization to increase the pink production once more, to the current level of 152 million eggs annually.

Hatchery technology and practices have evolved in the 20 years since PWSAC took over operation of Cannery Creek. In the early years of operation, hatchery salmon were marked with coded wire tags to differentiate them from wild stocks, a necessity for sound management of mixed wild and hatchery stocks. This practice was labor intensive, and employment levels following the 1989 production increases included 6 full-time employees and an additional 35 seasonal staff.

In 1995, funding from the Exxon Valdez Oil Spill (EVOS) Trustee Council enabled PWSAC to purchase and install a thermal otolith marking system at the hatchery. Otoliths are the small "ear" bones in fish, and controlled changes to the temperature the salmon fry's environment result in permanent, identifiable markings on the bone. These are later retrieved by fishery managers and used as a tool for mixed stock management. This new system replaced the wire-tagging program.

In 1996, a mechanical egg-take system was added at the Cannery Creek Hatchery. The system also included an electro-anesthesia unit, which stuns the salmon prior to the egg extraction, making the process far more efficient. It also allowed the organization to reduce staffing levels to 6 full-time employees and 11 part-time seasonal. These staffing levels have remained constant ever since.

The lifestyle of hatchery workers has also changed significantly over the last two decades. Through the mid-1990s, the hatchery experience was one of remote adventure, with staff's connection to the outside world limited to daily radio checks with the PWSAC main office, and mail and supply barge drops every second week. In the present day, employees are far more connected to the world beyond the hatchery. The facility at Cannery Creek has cell phone coverage, satellite television, and Internet access.

Other organizations and agencies are also able to take advantage of the existence of the remote hatchery infrastructure at Cannery Creek to support programs and data collection. The National Oceanic and Atmospheric Administration (NOAA) has used the Cannery Creek Hatchery as a weather station since 1978. Additionally, the Alyeska Pipeline Service Company's oil spill prevention and response program, SERVS (Ship Escort Response Vessel Systems), has staged equipment at the Cannery Creek Hatchery. Hatchery staff function as first-responders in the event of an oil spill in the area, and receive biennial trainings from the SERVS personnel. Since its deployment at the Cannery Creek Hatchery in 1990, this equipment has been used multiple times to respond to small spills from sinking fishing and fish tender vessels.

The commercial value of the fish produced at the Cannery Creek facility has been significant over the years, totaling approximately $28 million in ex-vessel value since 1990, including an estimated $3 million in 2007. In addition to these earnings by fishermen from salmon from Cannery Creek, there are earnings by PWSAC for their cost-recovery sales. In 2007, this totaled $1 million. In total, parties that benefit from PWSAC fish include harvesters, the processing sector, which employs people to process the fish, and other portions of the economy that are indirectly affected by the fish harvesting and processing activity. Impacts ripple through a range of seafood industry support businesses, retailers, local utilities, and other parts of the general regional economy.

Processing Activity

PWSAC-origin salmon are processed in plants around the Southcentral region, with additional product moving to other areas of the state as run strength and processing capacity dictates. In 2007, processors in Prince William Sound included Bear & Wolf Seafoods, Ocean Beauty Seafoods, Copper River Seafoods, Norquest/Triden: Seafoods, Great Pacific Seafoods, and Peter Pan Seafoods. On the Kenai Peninsula, Icicle Seafoods processed in Seward. In addition, with the significant volumes of salmon produced in Prince William Sound, some processing companies tendered fish to plants in Kodiak and Southeast Alaska to optimize processing capacity.

First wholesale values, by product type, are reported to the Alaska Department of Revenue through the Alaska Salmon Price Report. First wholesale is the price paid to primary processors the first time product is sold outside their primary production networks.

The estimated first wholesale value of the 2007 PWSAC harvest is $130 million. The McDowell Group's study of the *Economic Impact of Prince William Sound Aquaculture* for the 2006 season estimates the wholesale value of the PWSAC-origin salmon at approximately $81 million. The 2006 and 2007 estimates are based on different wholesale price data sources and cannot be compared directly (the estimates for 2006 vary by approximately 10 percent, depending on the data source). However, it is clear that the wholesale value of product from PWSAC is up significantly, corollary to the significant increase in harvest.

Assuming profitable operation, these revenues should cover the costs of producing and selling the seafood product. These costs include the cost of purchasing the raw material (or the ex-vessel value paid to fishermen), supplying required labor (the processing workforce), providing packaging and processing materials (such as cans, boxes, labels, or other inputs), power costs, marketing and sales costs, as well as any processor profits. Depending on the level of reliance on non-Alaska goods and services, some of these expenditures result in additional economic activity in the Alaska economy.

The wholesale value of the harvest takes into account those fish processed for cost recovery purposes, as well as those taken in the common property harvest by seiners and gillnetters. Pink salmon contributed more than 68 percent of the total value, with the balance from chum (19 percent), sockeye (12 percent) and coho (1 percent). Roe products are an important component of the value picture, contributing 28 percent of the total value despite being less than 10 percent of the finished product weight.

Market Conditions for Salmon

PWSAC production is focused on pink and chum salmon with additional minimal production of coho and sockeye. Market conditions for all four species showed stable or positive price trends. At the same time, the marketplace is currently dynamic, with flux in product forms and traditional markets.

Pink Salmon

Strong market conditions have created a positive situation for Alaska pink production in recent years. With strong interest in frozen pinks for value-added processing, and decreasing carryover inventories of canned pink salmon, new harvest production is in

high demand, and is driving ex-vessel prices upward.

A chronic surplus of canned salmon suppressed pink markets for much of the last ten years, with record oversupply and holding prices down. Prices bottomed out during 2002-2004, with statewide average ex-vessel years of production adding to the prices around 9-10 cents per pound.

In 2005, values began to improve, as demand for frozen pink salmon as a value-added product ingredient grew. The Alaska product form composition shifted away from canned salmon, creating additional opportunity for inventories of canned to decline. In 2006, the low statewide pink return accelerated the shift in product forms and accompanying price increases. Wholesale prices for 48-tall canned pink salmon rebounded from the low of $34 to $57 per case. Ex-vessel pink prices increased to 16 cents per pound in 2006 and preliminary statewide price for 2007 is 17 cents per pound.

This product form shift is consistent with global trends in seafood production and demand, and is unlikely to change in the near future. Pink salmon will likely continue to gain traction as a raw ingredient for value-added processing.

Chum Salmon

Statewide average chum salmon prices have improved substantially in recent years, from 19 cents per pound in 2003 to 32 cents per pound in 2006. Preliminary ex-vessel price for chums declined slightly to 30 cents in 2007, still a relatively strong price considering the 10-year average of 24 cents per pound.

Roe value has traditionally been a significant driver for the ex-vessel price of chums, but the recent increases result from increased wholesale value of chum salmon meat products.

The previous 10-year peak for statewide chum price was 2001, when average ex-vessel price was 34 cents per pound. This was driven largely by strong wholesale values for chum roe, at or near $11 per pound. More recently, chum roe has been selling at first wholesale prices in the $6-7 range and has remained fairly steady at that level since 2003.

In comparison, first wholesale value of frozen headed and gutted (H&G) chum has risen steadily since 2003, from the mid-40-cent range in 2003 to $1.09 per pound in early 2007. Frozen chum fillets show similar first wholesale value growth, from the $1.30-1.40 range in 2003 and 2004 to $2.00 per pound in 2006.

The improved price for chum salmon meat products are widely considered to be a function of the continued growth in broad consumer demand for salmon, and the ongoing success of efforts to differentiate wild salmon from farmed product. Post-season wholesale chum prices of 2006 may also have been buoyed by substitution activity associated with the pink salmon harvest shortfall that year.

Sockeye Salmon

The sockeye market generally was stable in 2007, particularly for frozen products, but flux in overall product form composition and export trends may result in long-term changes. Processing is shifting toward frozen product, including fillet, and exports to China for reprocessing have increased significantly. The traditional Japanese market has taken less of the product overall (though much of the Chinese reprocessed product is likely moving into Japan) and European buyers, fueled by the strong Euro, have purchased a greater proportion of the catch.

Price data for the first eight months of 2007 showed wholesale price for H&G frozen sockeye up 8 percent from the previous year, from $1.86 to $2.01 per pound. However, a good deal of the 2007 frozen sockeye pack remained unsold at that time, so these prices should be viewed only as early indicators. Fresh and frozen sockeye fillet prices dropped by 10-20 cents per pound, a decrease of less than 5 percent.

The canned salmon market is beginning to show some weakness, with consistent high production over the last four years resulting in some oversupply. Though price softening has been minor, accelerated decreases in the wholesale price may be possible.

Sockeye trends for the near future are expected to include significant increases in fillet production, particularly in Bristol Bay. As the product form mix changes, export and sales patterns are likely to continue to shift, with accompanying market adjustments.

COHO SALMON

The market position for Alaska coho salmon faces strengths and challenges at present. On the positive side, the first wholesale value of coho has increased steady since 2003, reflective of the generally increased demand for wild salmon in the marketplace. Frozen H&G coho, which makes up 55 percent of the Alaska production volume, saw increased prices from $1.40 per pound in 2003 to $2.35 in 2006. Prices for frozen fillets saw marked increase, as well, from $2.70 to $4.20. The value growth in the coho market has increased more steeply than that for sockeye. This may be due in part to the capture method for the majority of Alaska coho, which are primarily taken in troll fisheries in Southeast Alaska and in gillnet fisheries in Prince William Sound.

However, statewide coho production has been declining for three years, and 2007 harvests fell below 4 million fish for only the second time in 20 years. Though the short-term market response has been strong prices and strong demand, the risk of marketplace substitution increases as the era of low volumes continues.

Sport and Personal Use Harvest of PWSAC Salmon

Harvest of PWSAC-origin salmon extends to sport fishermen and personal use/subsistence users as well. Sport efforts are primarily focused on coho salmon, particularly in areas near Whittier, with some additional effort near Cordova and Chenega. In 2007, the sport harvest near Whittier totaled 14,300 coho salmon. Another 4,200 were taken near Cordova, and 5,900 near Chenega. When considering sport fishing activity it is important to note that actual harvest is not necessarily representative of catch or effort, as participants may release a portion of their catch, or have limited success even when targeting particular species.

Personal use harvests tend to focus on sockeye salmon, with the greatest portion of the total take coming from fisheries upriver on the Copper River system. These fish originate from the Gulkana Hatcheries, which are owned by the State of Alaska and operated by PWSAC. In 2007, 34,000 personal use sockeye were taken in these fisheries. Historically, the primary users of these personal use sockeye resources have been residents of the Railbelt region and the Richardson Highway corridor who participate in dipnet and fishwheel fisheries at Chitina and Glennallen.

The sport and personal use impacts of PWSAC's harvest represent some of the more broadly available benefits of the organization's activities. The broad range of user types, from vessel- and shore-based harvesters near Whittier or Cordova, to the far upriver users in the Copper Valley region, mean the fishery resource is distributed broadly throughout households and communities around Alaska.

The Magnitude of the Impact

Seafood harvesting and processing changes the face of communities across Alaska on a seasonal basis. Ports, processing plants and support businesses all ramp up for intense activity. Depending on the community, summer time populations can soar with influxes of harvesters and processing workers.

Some processing facilities draw from local populations of workers to staff their processing lines during peak harvest times. Others hire people from elsewhere in the state, country, or even internationally. Similarly, permit holders for fisheries live around the country and beyond. The seasonal influx of people and earnings has effects that can be felt throughout a regional economy. Businesses ranging from restaurants to grocery stores to real estate rental to industry support trades all see changes in their business volume as a result of fishing activity.

In addition to the direct fishing and processing, the operation of the PWSAC organization itself also impacts the regional economies. With an operating budget of more than $11 million in 2007, PWSAC's expenditures included salaries for 74 full time equivalent employees, supplies, cost recovery contracts, professional services, and other necessary business inputs.

Though data sets to support a full evaluation of the PWSAC economic impact in 2007 are not yet available, it is possible to examine the relative size of the 2007 harvest to that from 2006 and earlier years and consider the magnitude of the change. In general, the salmon return in 2007 was significantly larger than that in 2006, with major increases in pink and chum abundance and more modest increases in sockeye. Coho experienced a moderate decrease.

In 2006, the total ex-vessel value of the harvest, excluding hatchery cost recovery fish, was estimated at $15 million. In 2007, that estimated value increased more than 70 percent, to $26 million. The first wholesale value of PWSAC salmon also increased, but by a slightly lower factor of approximately 60 percent.

In the 2006 update, which included a full economic impact analysis, we estimated the total statewide impact of the commercial harvest of PWSAC fish to be $135 million. This was based on the ex-vessel value earned by Alaska resident commercial harvesters, processing activity, sport fishing, and PWSAC's own organizational expenditures. It included the downstream spending effects of these activities in communities around the state.

It is beyond the scope of this research to fully model the economic impacts of the 2007 PWSAC harvest. However, given the magnitude of the 2007 fishery as compared to 2006, it is possible that the overall economic footprint in Alaska associated with PWSAC production in 2007 could total $175 million. It is clear from the sheer scale of the 2007 harvest and the estimated impacts of PWSAC's activities in more modest years that the 2007 PWSAC salmon returns created significant economic benefit in the State of Alaska.