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November 17, 2008

New Southeast Alaska Enhancement Allocation Model with Preliminary 2008 Data

Dear RPT members:

Modern salmon enhancement began in the 1970's and allocation of enhanced fish has been a contentious step-child every step of the way. In accordance with AS 16.10.375, an historic record of how enhancement programs were to be developed and shared by the three commercial gears groups can be understood beginning with the Comprehensive Salmon Plan for Southeast Alaska, Phase I (1981); the Phase II Comprehensive Salmon Plans (1982 & 1983); and the most recent 2004 Comprehensive Salmon Plan for S.E. Alaska: Phase III. Through a three year period in the early 1990's the Southeast Alaska Allocation Task Force (SATF) developed a formal enhanced fish sharing protocol adopted by the Board of Fisheries in 1994 as finding #94-02-FB (5 AAC 33.364).

This current regulation directs the joint RPT to evaluate the allocation of enhanced fish and make recommendations to the ADF&G commissioner that will have bearing on imbalances in the allocation plan. At the spring 2008 joint RPT meeting fishermen representatives asked if a model could be developed that would encompass all southeast region enhancement projects by species, harvest type, gear type, and value. Logically the ADF&G PNP office would perform this task since enhanced fish allocation data and graphic output has been their bailiwick since 1994. Additionally, ADF&G had a rudimentary model they developed in 2001, although it became apparent the PNP office would not perform the work. Considering the regulatory mandate and strong desire of the joint RPT to meet its responsibilities, NSRAA volunteered to take on the task of constructing a model for the regional planning team.

It is important to note that NSRAA staff is only the *messenger* and not the agenda driver in this process. NSRAA uses the same data that ADF&G uses for reporting enhanced allocation, that is CFEC data, and ADF&G data from agency Annual Reports, but the model also includes project data supplied directly from the producing agencies when available. For transparency the model developed by Chip Blair, NSRAA data analyst, may be shared and scrutinized by ADF&G, RPT members, and enhancement producers. NSRAA staff has received numerous calls from fishermen requesting a variety of scenarios run through the model and we have attempted to provide the requested information. The following report includes a description of the model and provides potential results for BoF proposals pertaining to enhanced allocation; data in the model for 2008 is preliminary.

I believe the model provides an important tool for predictive scenarios that will aid the joint RPT in evaluating changes and how those changes may impact the allocation of enhanced fish. Consider the model a work in progress, open for tweaks, serious modification, or the trash can.

Sincerely,

Steve Reifenstuhl,
Operations Manager, NSRAA

SE Alaska Enhanced Salmon

Allocation Model

*1994-2008**

New for 2008:

- Updated format allowing data analysis
- Preliminary analysis of numerous allocation rebalancing options

Comments:

- *2007 & 2008 contribution data are preliminary
- *2008 price and weight data are preliminary
- Data in previous model was by species/gear/Agency; new model adds Project level resolution. In the process of splitting out the data, some data were updated. While there are numerous changes to the dataset, the new model closely approximates the older version – resulting in only minor changes in the allocation percentages.

- This model was created by Chip Blair, NSRAA Data Analyst, with input from ADF&G, NSRAA, SSRAA, DIPAC and AKI staff. The model is an adaptation of the original model created by ADF&G.
- Please note that this is a work in progress, not a finished product.

Contents

1. Model description

At the spring 2008 joint RPT meeting a proposal was made to update the current allocation model and review Marianne McNair's 2001 forecasting model. Steve Reifensthul volunteered that NSRAA would attempt to take on this task.

Upon initial review of the existing ADF&G model, it became apparent to me that the data needed to be re-worked into a more manageable format, and that a lot of data that had been lumped together needed to be split out. The existing model was fine for tracking the allocation percentages and rolling 5-year averages, but it was nearly impossible to review the underlying data. It seemed to me that updating changes to the data and error checking were quite difficult with the existing model. Further, there was a huge amount of underlying data that if put into a different (actually simpler) format could be extremely helpful in sorting out and analyzing the allocation situation.

I decided to:

1) Transfer existing data into a database format that would separate out contribution, price & weight data.
2) Agencies in the model were NSRAA, SSRAA, ADF&G, PNP. I decided to split out PNP into the various agencies (DIPAC, AKI, etc).
3) Split further to the Project level, so contributions for various projects could be analyzed.
4) Focus on the allocation model and not Marianne's forecasting model, which was extremely complex. I believe all of the forecasting in her model can by incorporated into the new model.

Current Status:

1) NSRAA, DIPAC, AKI have been split out to the project level for all years.
2) SSRAA data is split out to the project level for the past 5 years (2004-08; previous years have all projects lumped together). SSRAA will update earlier years as time allows.
3) Other PNP data needs to be split out.
4) Roe sales need to be addressed. (There are about $1.1M value in roe sales that need to be split out by project; this is a very small percentage of the overall value.)
5) Overall, the dataset is in fairly good shape; with adequate detail to analyze the major projects and get a good read on the balance between gear groups.

Structure of Model

Without getting into too much detail, the data is in an Excel database, which can be accessed using Excel Pivot tables. A few details:

1) Contribution estimates come directly from PNP Annual Reports Schedule C or F.
2) Price and weight data come from CFEC. The data is available by port (Ketchikan, Petersburg, Juneau, Sitka, etc) or by ALL SE combined. For simplicity, I chose to use the ALL SE dataset.
3) It is relatively easy to update the model annually and to error check.
4) Once updated it is easy to generate an assortment of "canned" reports and charts, including the traditional 5-year rolling average for each gear group you are used to.
5) Customized reports are also easy to create.

2. Current allocation situation after the 2008 season

Season Review

Preliminary data shows 2008 as being a record year, with ex-vessel value of SE Enhanced Salmon topping $40 million, with the following splits: Troll $6.5M, Seine $16.8M, Gillnet $17.0M. Note that all gear groups had substantial increases from 2007. As a percent of the total value: Troll 16%, Seine 42%, Gillnet 42%.

The following tables and chart show the historical value splits and 5-year rolling averages for each gear group.

Allocation Summary
SE Enhanced Salmon Value by Gear

Species	(All)
Sale Type	(All)

Sum of Value	Gear				
Year	troll	seine	gillnet	Grand Total	
1994	5,382,106	9,381,525	4,072,774	18,836,405	
1995	2,938,316	13,972,576	7,068,461	23,979,354	
1996	3,589,604	11,817,440	4,585,537	19,992,582	
1997	3,579,674	11,336,154	4,748,837	19,664,665	
1998	2,200,177	10,947,747	4,330,051	17,477,975	
1999	3,808,530	12,063,299	4,581,971	20,453,800	
2000	3,448,473	17,174,058	6,398,075	27,020,606	
2001	4,153,571	7,792,085	4,855,074	16,800,730	
2002	2,500,334	3,698,976	5,061,627	11,260,937	
2003	2,554,471	3,717,636	4,194,477	10,466,584	
2004	3,687,025	5,561,138	6,269,043	15,517,206	
2005	3,573,066	4,299,254	4,931,637	12,803,958	
2006	4,203,802	15,037,545	12,191,878	31,433,225	*2006 data is final*
2007	4,839,375	6,544,788	9,134,114	20,518,277	*Preliminary Contrib (Final Price)*
2008	6,470,326	16,772,607	17,006,149	40,249,082	*Preliminary Contrib & Price*
Grand Total	56,928,851	150,116,829	99,429,706	306,475,385	

Average	$ 3,795,257	$ 10,007,789	$ 6,628,647	$ 20,431,692
Percent	19%	49%	32%	100%
Target	27-32%	44-49%	24-29%	

Data after 5.7.08 corrections - CB
Price & Weight data = ALL SE Average

Table 1. Value estimates by gear for 1994-2008

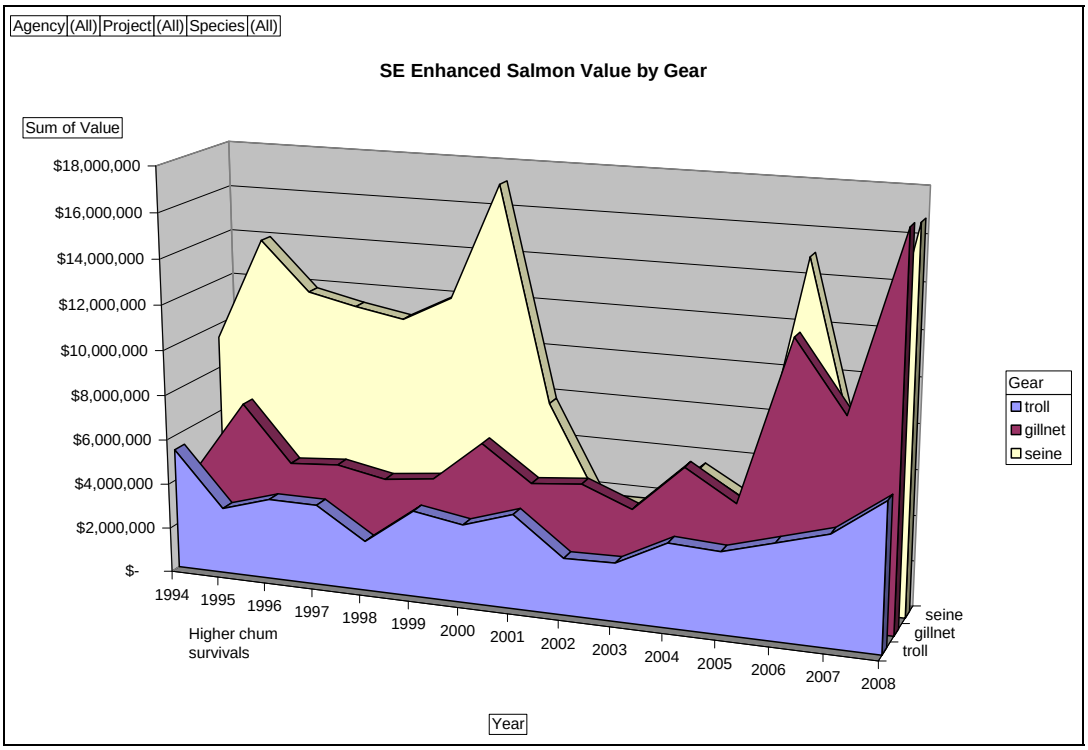


Chart 1. Value estimates by gear for 1994-2008 (Table 1 data.)

5-Year Rolling Averages for Gear Groups

Source: ADF&G ESTIMATES (SE ALLOCATION DATA FROM ADF&G)

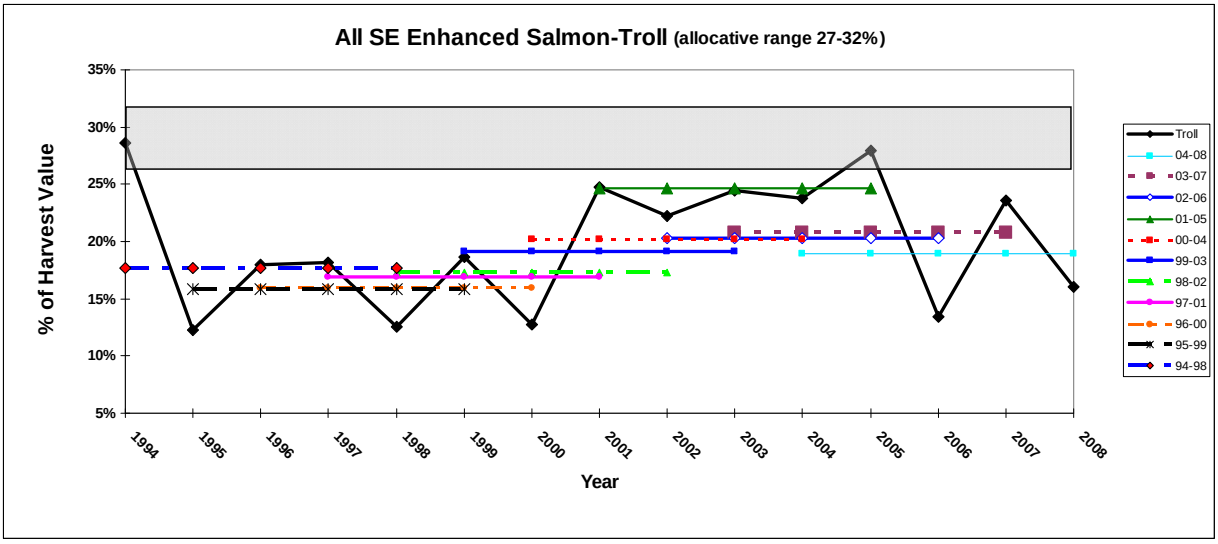
	SE	SE	SE	
	Gear			
Period	Troll	Gillnet	Seine	TOTAL
94-98	18%	25%	57%	100%
95-99	16%	25%	59%	100%
96-00	16%	24%	61%	100%
97-01	17%	25%	58%	100%
98-02	17%	27%	56%	100%
99-03	19%	29%	52%	100%
00-04	20%	33%	47%	100%
01-05	25%	38%	38%	100%
02-06	20%	40%	40%	100%
03-07*	21%	40%	39%	100%
04-08*	19%	41%	40%	100%
ALL Years 94-08*	19%	32%	49%	

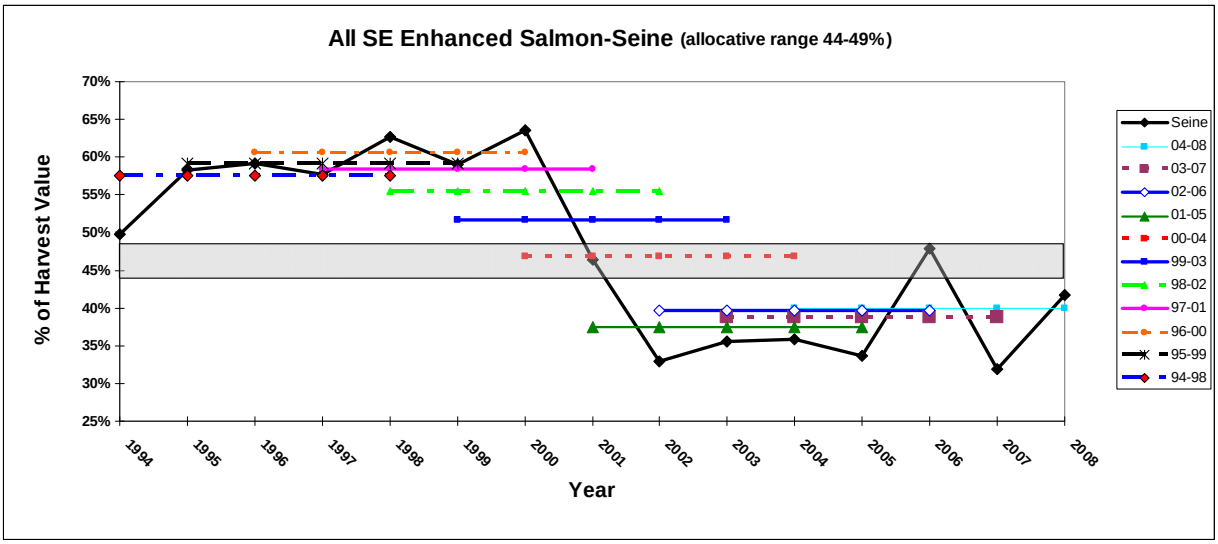
	Troll	Drift	Purse
Target	27-32%	24-29%	44-49%

Color code: below range | in range | above range

**2007 data is preliminary*
**2008 data is preliminary*

Table 2. 5-year rolling average calculations.





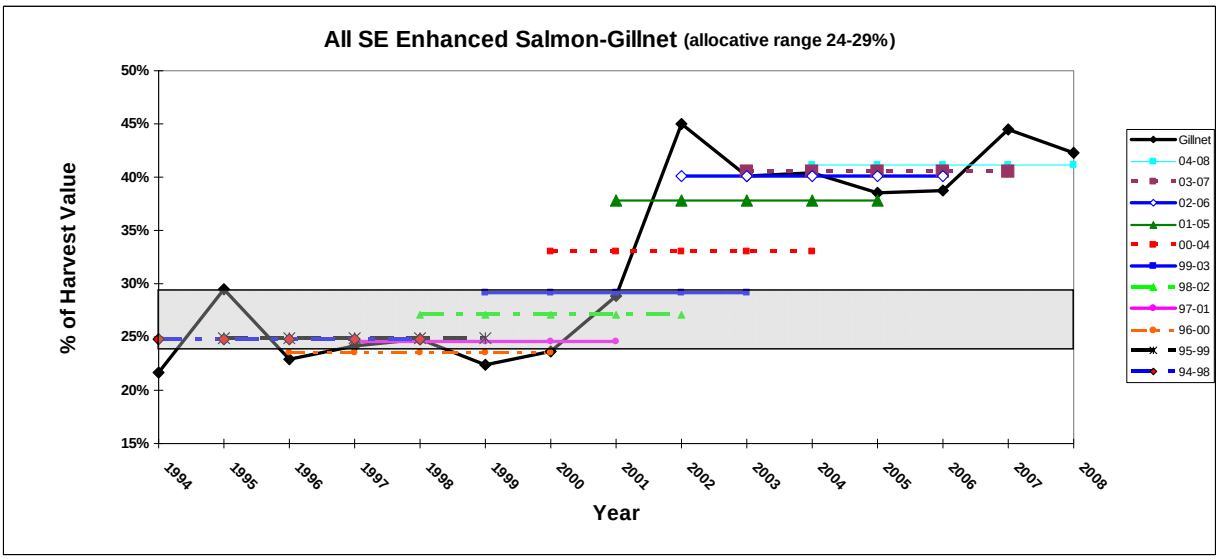


Chart 2. 5-year rolling averages.

Quantifying the Allocation Balance

A quick look at Chart 2 and Table 2 above shows that under the current allocation agreement, there is an imbalance among gear groups. Gillnetters have been above their range for the most recent 6 5-year cycles, seiners below their range for 4 cycles, and trollers below their range for all 5-year cycles (based on preliminary data).

As for the causes of the situation, there are undoubtedly several, among them:

1) the success of DIPAC's Late-Large chum program
2) SSRAA's change in evaluation methods from CWT to otolith sampling
3) lower chum survival rates compared to the 1990s
4) higher than anticipated exploitation of Chinook & coho by the net groups in terminal areas
5) Others?

A lot of discussion has revolved around the cause of the imbalance, and possible changes to management of fisheries or changing production levels to address the situation, per the allocation agreement. We thought it would be instructive to include in the model a mechanism to quantify the magnitude of the imbalance. In other words, what kind of shift in value would it take among gear groups to rebalance?

Gear	2004-08 Average	Percent	Target Range	MidPoint	Under/Over MidPoint
troll	$ 4,555,000	19%	27-32%	28.8%	-9.9%
seine	$ 9,643,000	40%	44-49%	45.4%	-5.4%
gillnet	$ 9,907,000	41%	24-29%	25.9%	15.2%
Total	$ 24,104,000	100%		100.0%	

Table 3. Value and percent to gear groups: 5-year average (2004-08)

The above table shows the most recent 5-year value and percent to each gear group. I have taken the mid-point of each target range, and compared that to the 5-year average percent. Notice that for the 5-year period:

- trollers are 9.9% below their midpoint,
- seiners are 5.4% below, and
- gillnetters are 15.2% above.

To calculate the amount of change required to rebalance, I took an assumed value for the upcoming 5-years and split the total among the three gear groups per the mid-point percentages. I call the resulting values the "09-13 target ". I subtracted the 2004-08 value splits from this target to get an estimate of the amounts needed to rebalance.

For the upcoming 5 year period (2009-2013) I am using an estimated annual value equal to the previous 5 year average: $24,104,000. It's the best estimate we have with current production levels, survival rates, price, etc.

This is all laid out in the following table (Table 4.)

Commercial Ex-Vessel Value of All SE Enhanced Salmon

Calculation of Adjustments needed to bring gear groups back into range.

The latest 5-year average (2004-08) for total enhanced value is $24,104,000 per year.

Using this value as the estimated annual value for the upcoming 5-year period, and applying the Mid-points of the target range:

Mid-points of target ranges>		28.8%	45.4%	25.9%	100.0%
		SE	SE	SE	
		Gear			
Period	PROJECTED	Troll	Purse	Drift	TOTAL
2009	$ 24,104,000	6,937,000	10,935,000	6,232,000	24,104,000
2010	$ 24,104,000	6,937,000	10,935,000	6,232,000	24,104,000
2011	$ 24,104,000	6,937,000	10,935,000	6,232,000	24,104,000
2012	$ 24,104,000	6,937,000	10,935,000	6,232,000	24,104,000
2013	$ 24,104,000	6,937,000	10,935,000	6,232,000	24,104,000
5-yr	$ 120,520,000	$ 34,685,000	$ 54,675,000	$ 31,160,000	$ 120,520,000
		28.8%	45.4%	25.9%	
09-13 target		6,937,000	10,935,000	6,232,000	24,104,000
04-08*		$ 4,555,000	$ 9,643,000	$ 9,907,000	$ 24,105,000
Change required		2,382,000	1,292,000	(3,675,000)	
Percent change from 04-08*		52%	13%	-37%	

Table 4. Calculating the change required to re-balance

Results:

It would take a shift of $3,675,000 of value from the gillnetters to the other two groups to put all groups at the mid-point of their ranges, with $2.38M going to trollers and $1.29M to seiners.

Another way of looking at this is with a percent change from the current status: gillnet value would have to drop 37% from 04-08 levels, coupled with increases in value of 52% for trollers and 13% for seiners. Or, (if possible) new production might be added for trollers and seiners while gillnet value remained constant.

Other features of the model

Data can be viewed and filtered in numerous ways using the model. Below are some examples of charts and tables that are easily updated when new data is entered. Data can be filtered to include/exclude agencies, species, projects, etc.

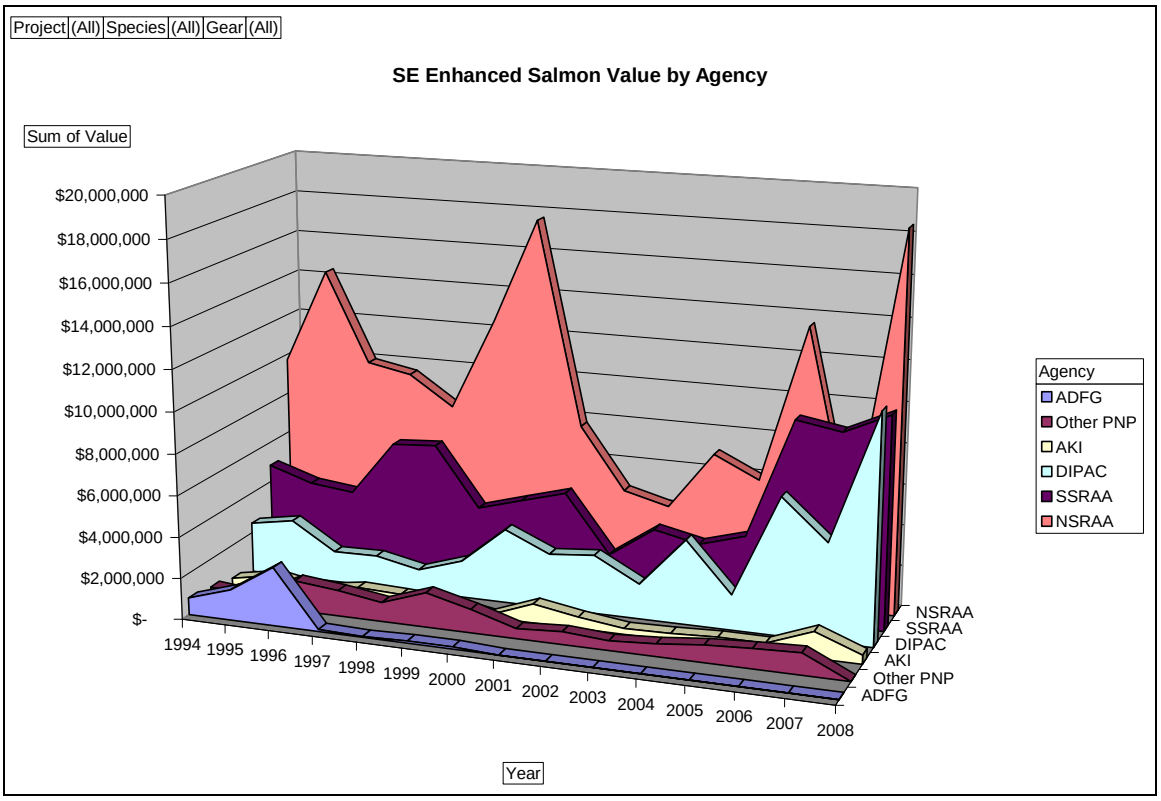


Chart 3. Value by Agency – Current Status (2007-08 Prelim.)

Project	(All)
Species	(All)
Gear	(Multiple Items)

Sum of Value	Agency						
Year	ADFG	Other PNP	AKI	DIPAC	SSRAA	NSRAA	Grand Total
1994	$ 817,670	$ 638,695	$ 354,615	$ 2,480,115	$ 4,827,805	$ 9,717,505	$ 18,836,405
1995	$ 1,484,608	$ 434,198	$ 742,383	$ 2,845,123	$ 4,132,201	$ 14,340,839	$ 23,979,354
1996	$ 2,833,764	$ 1,464,267	$ 341,230	$ 1,508,895	$ 3,895,422	$ 9,949,004	$ 19,992,582
1997	$ 94,544	$ 1,249,864	$ 668,976	$ 1,553,042	$ 6,562,189	$ 9,536,050	$ 19,664,665
1998	$ 36,407	$ 930,820	$ 590,526	$ 1,113,960	$ 6,707,155	$ 8,099,106	$ 17,477,975
1999	$ 106,662	$ 1,680,149	$ 479,375	$ 1,805,734	$ 3,794,755	$ 12,587,126	$ 20,453,800
2000	$ 105,503	$ 1,144,649	$ 106,454	$ 3,618,105	$ 4,407,252	$ 17,638,642	$ 27,020,606
2001		$ 488,535	$ 926,179	$ 2,658,049	$ 5,004,073	$ 7,723,893	$ 16,800,730
2002		$ 617,321	$ 566,058	$ 2,850,140	$ 2,183,734	$ 4,732,014	$ 10,949,268
2003		$ 466,567	$ 285,778	$ 1,698,741	$ 3,684,386	$ 4,164,553	$ 10,300,025
2004		$ 604,515	$ 323,862	$ 4,102,865	$ 3,217,348	$ 6,990,045	$ 15,238,635
2005		$ 839,849	$ 426,985	$ 1,709,304	$ 3,849,047	$ 5,947,168	$ 12,772,353
2006		$ 965,454	$ 423,268	$ 6,658,163	$ 9,675,289	$ 13,546,075	$ 31,268,249
2007		$ 1,052,296	$ 1,268,958	$ 4,732,253	$ 9,292,388	$ 3,998,136	$ 20,344,032
2008			$ 430,836	$ 11,063,842	$ 10,312,823	$ 18,441,580	$ 40,249,082
Grand Total	$ 5,479,159	$ 12,577,181	$ 7,935,482	$ 50,398,332	$ 81,545,868	$ 147,411,738	$ 305,347,760

**2007 data is preliminary*
**2008 data is preliminary*

Table 5. Value by Agency data – Current Status (2007-08 Prelim.)

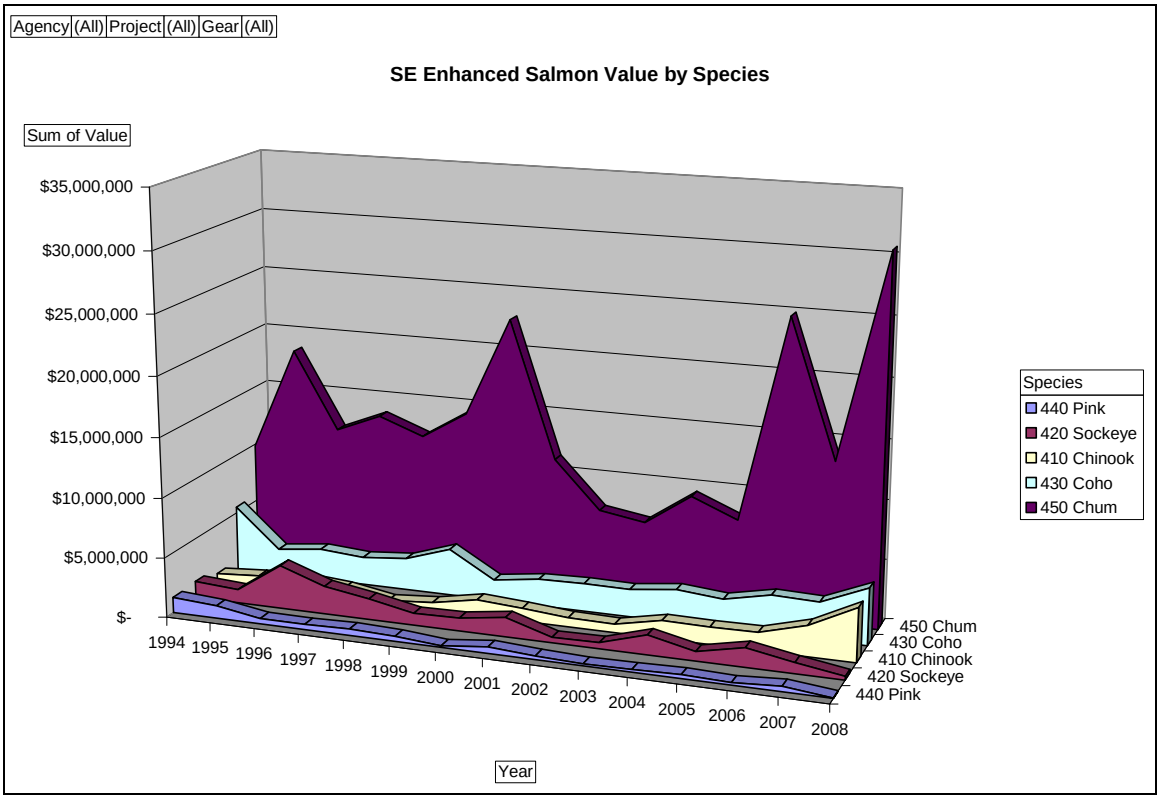


Chart 4 – Value by Species – Current Status (2007-08 Prelim.)

Agency	(All)
Project	(All)
Gear	(All)

Sum of Value	Species					
Year	440 Pink	420 Sockeye	410 Chinook	430 Coho	450 Chum	Grand Total
1994	$ 1,289,437	$ 1,376,727	$ 810,852	$ 5,496,524	$ 9,862,864	$ 18,836,405
1995	$ 1,046,624	$ 1,147,565	$ 1,071,866	$ 2,189,021	$ 18,524,278	$ 23,979,354
1996	$ 441,684	$ 3,654,636	$ 1,240,804	$ 2,618,726	$ 12,036,733	$ 19,992,582
1997	$ 437,525	$ 2,352,773	$ 953,626	$ 2,358,886	$ 13,561,855	$ 19,664,665
1998	$ 536,123	$ 1,750,710	$ 312,249	$ 2,685,823	$ 12,193,070	$ 17,477,975
1999	$ 415,028	$ 1,010,718	$ 607,761	$ 3,931,810	$ 14,488,483	$ 20,453,800
2000	$ 115,853	$ 1,084,582	$ 1,309,703	$ 1,741,389	$ 22,769,080	$ 27,020,606
2001	$ 533,586	$ 1,613,834	$ 1,067,248	$ 2,258,043	$ 11,328,019	$ 16,800,730
2002	$ 303,690	$ 457,053	$ 751,936	$ 2,350,712	$ 7,397,546	$ 11,260,937
2003	$ 167,970	$ 514,817	$ 689,416	$ 2,320,008	$ 6,774,374	$ 10,466,584
2004	$ 219,733	$ 1,641,917	$ 1,481,337	$ 2,773,144	$ 9,401,074	$ 15,517,206
2005	$ 320,577	$ 780,074	$ 1,440,971	$ 2,428,793	$ 7,833,543	$ 12,803,958
2006	$ 201,845	$ 1,598,269	$ 1,491,675	$ 3,246,883	$ 24,894,554	$ 31,433,225
2007	$ 439,249	$ 908,967	$ 2,539,812	$ 3,133,056	$ 13,497,194	$ 20,518,277
2008	$ 42,233	$ 313,577	$ 4,471,926	$ 4,759,321	$ 30,662,026	$ 40,249,082
Grand Total	$ 6,511,157	$ 20,206,218	$ 20,241,182	$ 44,292,138	$ 215,224,689	$ 306,475,385

**2007 data is preliminary*
**2008 data is preliminary*

Table 6. Value by Species data – Current Status (2007-08 Prelim.)

Species	450 Chum
Agency	NSRAA
Sale Type	(All)
Project	Medvejie/Deep Inlet

Sum of Value	Gear				
Year	troll	seine	gillnet	Grand Total	
1994	$ 629,017	$ 953,907	$ 393,046	$ 1,975,970	
1995	$ 517,271	$ 1,476,363	$ 1,405,054	$ 3,398,688	
1996	$ 535,093	$ 2,433,774	$ 369,181	$ 3,338,048	
1997	$ 638,703	$ 3,549,426	$ 895,521	$ 5,083,650	
1998	$ 166,561	$ 3,042,516	$ 990,128	$ 4,199,206	
1999	$ 118,688	$ 4,636,988	$ 1,303,514	$ 6,059,190	
2000	$ 1,044,668	$ 6,075,077	$ 1,570,492	$ 8,690,237	
2001	$ 632,829	$ 1,239,777	$ 882,024	$ 2,754,630	
2002	$ 136,626	$ 487,856	$ 540,208	$ 1,164,691	
2003	$ 127,716	$ 701,827	$ 424,172	$ 1,253,716	
2004	$ 248,860	$ 1,574,736	$ 1,123,885	$ 2,947,481	
2005	$ 495,148	$ 1,356,489	$ 1,427,783	$ 3,279,419	
2006	$ 526,148	$ 3,410,691	$ 2,215,109	$ 6,151,948	*2006 data is final*
2007	$ 530,686	$ 315,109	$ 336,593	$ 1,182,388	*Preliminary*
2008	$ 355,564	$ 2,039,958	$ 1,220,038	$ 3,615,560	*Preliminary*
Grand Total	$ 6,703,578	$ 33,294,495	$ 15,096,749	$ 55,094,822	

Table 7. An example of a single project's contribution value history (Deep Inlet Chum).

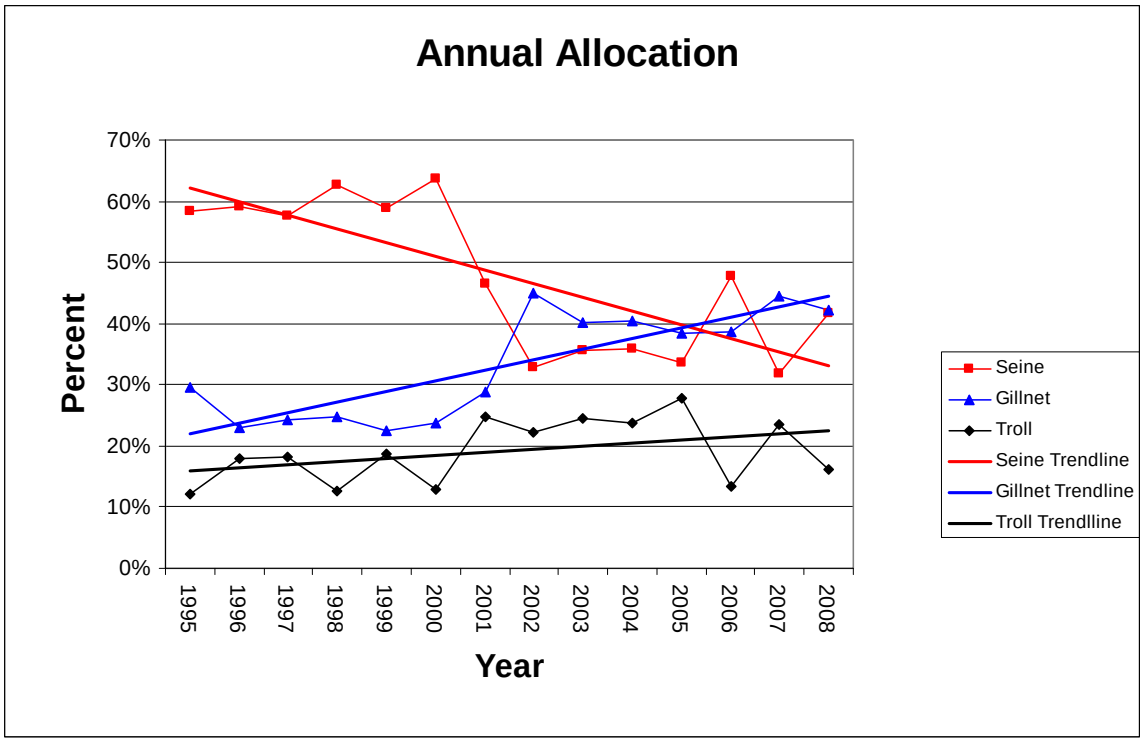


Chart 5 – Allocation 5-year averages with trends (all projects, all species).
– Current Status (2007-08 Prelim.)

3. Proposals to rebalance

There's no shortage of ideas on rebalancing. We have fielded numerous questions on how various ideas would affect the allocation. I have divided these into groups:

c. *BOF proposals*
d. *Management options* – other management possibilities outside of BOF proposals.
e. *New (or increased) Production* – a look at some options.
f. *Marine survival considerations* – some "what-if" scenarios.
g. *Adjustments to current model* – a look at the possibility of adjusting allocation percentages.

a. Board of Fish Proposals

Name	Description	Submitted by	Project	Model Results
BOF 244	Alter SE AK Allocation Agreement to include only NSRAA & SSRAA	Mike Saunders / Lynn Canal Gillnetters Assoc.	ALL	See below.
BOF 267	Change Nakat Inlet to 1:1 SN:GN rotation	SEAS	Nakat Inlet	Shift 10,000 chum from GN to SN
BOF 268	Neets Bay harvest will go to NET gear group below their range	SEAS	Neets Bay	Shift <5,000 chum from GN to SN (potential for more – low surplus fish in recent years)
BOF 271	Change Anita Bay from 2GN:1SN to 1GN:2GN thru July 31 & 2GN:1SN Aug 1 to end of season	SEAS	Anita Bay	Shift 20,000 chum from GN to SN
BOF 273	Change Deep Inlet to 1:1 rotation for 2009-11	Joint RPT	Deep Inlet	Shift 215,000 chum from GN to SN
BOF 274	Change Deep Inlet to 1:1 rotation for 2009-11	SEAS	Deep Inlet	Same as BOF 273

BOF 244 – This proposal of course is *outside the existing SE Allocation Plan.* I ran the data anyway….The model can easily filter out only NSRAA and SSRAA data. One question is whether to include the portion of Boat Harbor and Limestone Inlet production funded by NSRAA over the years. I ran the data both ways.

Using either Boat Harbor/Limestone Inlet scenario, the balance is much closer than running the data with all Agencies (see Tables 2 & 4.), with the trollers still being out.

CHART 1 Data: Value by GEAR

Agency	(Multiple Items)	NSRAA & SSRAA
Project	(All)	
Species	(All)	
Tweak	Regular	All BH & LI chum credited to DIPAC

Sum of Value	Gear			
Year	troll	gillnet	seine	Grand Total
1994	$ 4,264,113	$ 2,380,267	$ 7,900,930	$ 14,545,310
1995	$ 2,521,567	$ 3,366,244	$ 12,585,230	$ 18,473,041
1996	$ 3,041,969	$ 1,650,666	$ 9,151,791	$ 13,844,426
1997	$ 2,790,781	$ 2,643,909	$ 10,663,549	$ 16,098,239
1998	$ 1,892,758	$ 2,665,109	$ 10,248,394	$ 14,806,261
1999	$ 3,287,549	$ 2,499,125	$ 10,595,207	$ 16,381,881
2000	$ 2,900,002	$ 2,711,894	$ 16,433,998	$ 22,045,894
2001	$ 3,468,888	$ 2,375,090	$ 6,883,988	$ 12,727,966
2002	$ 1,876,343	$ 1,830,965	$ 3,208,441	$ 6,915,749
2003	$ 2,142,174	$ 2,558,223	$ 3,148,542	$ 7,848,939
2004	$ 3,257,325	$ 2,829,798	$ 4,120,270	$ 10,207,393
2005	$ 3,022,486	$ 3,267,844	$ 3,505,885	$ 9,796,215
2006	$ 3,625,547	$ 5,773,058	$ 13,822,759	$ 23,221,365
2007	$ 3,626,213	$ 4,043,018	$ 5,621,293	$ 13,290,524
2008	$ 5,926,152	$ 6,199,488	$ 16,628,763	$ 28,754,403
Grand Total	$ 47,643,867	$ 46,794,699	$ 134,519,040	$ 228,957,605
	20.8%	20.4%	58.8%	100.0%

*2007 data is preliminary
*2008 data is preliminary

5-Year Rolling Averages for Gear Groups

Source: ADF&G ESTIMATES (SE ALLOCATION DATA FROM ADF&G)

	SE	SE	SE	
	Gear			
Period	Troll	Gillnet	Seine	TOTAL
94-98	19%	16%	65%	100%
95-99	17%	16%	67%	100%
96-00	17%	15%	69%	100%
97-01	17%	16%	67%	100%
98-02	18%	17%	65%	100%
99-03	21%	18%	61%	100%
00-04	23%	21%	57%	100%
01-05	29%	27%	44%	100%
02-06	24%	28%	48%	100%
03-07*	24%	29%	47%	100%
04-08*	23%	26%	51%	100%
ALL Years				
94-08*	21%	20%	59%	

	Troll	Drift	Purse
Target	27-32%	24-29%	44-49%

Color code: below range | in range | above range

Table 8a. BOF 244 - Alter SE AK Allocation Agreement to include only NSRAA & SSRAA. NSRAA data includes no value for Boat Harbor/Limestone Chum.

CHART 1 Data: Value by GEAR

Agency	(Multiple Items)	NSRAA & SSRAA
Project	(All)	
Species	(All)	
Tweak	(All)	Portion of BH & LI chum credited to NSRAA

Sum of Value	Gear			
Year	troll	gillnet	seine	Grand Total
1994	$ 4,264,113	$ 3,149,480	$ 7,900,930	$ 15,314,524
1995	$ 2,521,567	$ 4,119,653	$ 12,585,230	$ 19,226,450
1996	$ 3,041,969	$ 1,870,612	$ 9,151,791	$ 14,064,372
1997	$ 2,790,781	$ 3,042,703	$ 10,663,549	$ 16,497,033
1998	$ 1,892,758	$ 2,927,071	$ 10,248,394	$ 15,068,223
1999	$ 3,287,549	$ 2,891,278	$ 10,595,207	$ 16,774,034
2000	$ 2,900,002	$ 3,552,435	$ 16,433,998	$ 22,886,435
2001	$ 3,468,888	$ 2,769,876	$ 6,883,988	$ 13,122,752
2002	$ 1,876,343	$ 2,309,655	$ 3,208,441	$ 7,394,438
2003	$ 2,142,174	$ 2,785,403	$ 3,148,542	$ 8,076,118
2004	$ 3,257,325	$ 3,363,224	$ 4,120,270	$ 10,740,819
2005	$ 3,022,486	$ 3,506,352	$ 3,505,885	$ 10,034,723
2006	$ 3,625,547	$ 6,751,509	$ 13,822,759	$ 24,199,816
2007	$ 3,626,213	$ 4,661,023	$ 5,621,293	$ 13,908,530
2008	$ 5,926,152	$ 7,602,338	$ 16,628,763	$ 30,157,253
Grand Total	$ 47,643,867	$ 55,302,612	$ 134,519,040	$ 237,465,519
	20.1%	23.3%	56.6%	100.0%

*2007 data is preliminary
*2008 data is preliminary

5-Year Rolling Averages for Gear Groups

Source: ADF&G ESTIMATES (SE ALLOCATION DATA FROM ADF&G)

	SE	SE	SE	
	Gear			
Period	Troll	Gillnet	Seine	TOTAL
94-98	18%	19%	63%	100%
95-99	17%	18%	65%	100%
96-00	16%	17%	67%	100%
97-01	17%	18%	65%	100%
98-02	18%	19%	63%	100%
99-03	20%	21%	59%	100%
00-04	22%	24%	54%	100%
01-05	28%	30%	42%	100%
02-06	23%	31%	46%	100%
03-07*	23%	31%	45%	100%
04-08*	22%	29%	49%	100%
ALL Years				
94-08*	20%	23%	57%	

	Troll	Drift	Purse
Target	27-32%	24-29%	44-49%

Color code: below range | in range | above range

Table 8b. BOF 244 - Alter SE AK Allocation Agreement to include only NSRAA & SSRAA. NSRAA data includes value from NSRAA's portion of Boat Harbor/Limestone Chum.

Commercial Ex-Vessel Value of All SE Enhanced Salmon

Calculation of Adjustments needed to bring gear groups back into range.

The latest 5-year average (2004-08) for total enhanced value is $17,054,000 per year.

Using this value as the estimated annual value for the upcoming 5-year period, and applying the Mid-points of the target range:

Mid-points of target ranges>		28.8%	45.4%	25.9%	100.0%
		SE	SE	SE	
		Gear			
Period	PROJECTED	Troll	Purse	Drift	TOTAL
2009	$ 17,054,000	4,908,000	7,737,000	4,409,000	17,054,000
2010	$ 17,054,000	4,908,000	7,737,000	4,409,000	17,054,000
2011	$ 17,054,000	4,908,000	7,737,000	4,409,000	17,054,000
2012	$ 17,054,000	4,908,000	7,737,000	4,409,000	17,054,000
2013	$ 17,054,000	4,908,000	7,737,000	4,409,000	17,054,000
5-yr	$ 85,270,000	$ 24,540,000	$ 38,685,000	$ 22,045,000	$ 85,270,000
		28.8%	45.4%	25.9%	
09-13 target		4,908,000	7,737,000	4,409,000	17,054,000
04-08*		$ 3,892,000	$ 8,740,000	$ 4,423,000	$ 17,055,000
Change required		1,016,000	(1,003,000)	(14,000)	
Percent change from 04-08*		26%	-11%	0%	

Table 9a. BOF 244 - Alter SE AK Allocation Agreement to include only NSRAA & SSRAA. NSRAA data includes no value for Boat Harbor/Limestone Chum.

Commercial Ex-Vessel Value of All SE Enhanced Salmon

Calculation of Adjustments needed to bring gear groups back into range.

The latest 5-year average (2004-08) for total enhanced value is $17,808,000 per year.

Using this value as the estimated annual value for the upcoming 5-year period, and applying the Mid-points of the target range:

Mid-points of target ranges>		28.8%	45.4%	25.9%	100.0%
		SE	SE	SE	
		Gear			
Period	PROJECTED	Troll	Purse	Drift	TOTAL
2009	$ 17,808,000	5,125,000	8,079,000	4,604,000	17,808,000
2010	$ 17,808,000	5,125,000	8,079,000	4,604,000	17,808,000
2011	$ 17,808,000	5,125,000	8,079,000	4,604,000	17,808,000
2012	$ 17,808,000	5,125,000	8,079,000	4,604,000	17,808,000
2013	$ 17,808,000	5,125,000	8,079,000	4,604,000	17,808,000
5-yr	$ 89,040,000	$ 25,625,000	$ 40,395,000	$ 23,020,000	$ 89,040,000
		28.8%	45.4%	25.9%	
09-13 target		5,125,000	8,079,000	4,604,000	17,808,000
04-08*		$ 3,892,000	$ 8,740,000	$ 5,177,000	$ 17,809,000
Change required		1,233,000	(661,000)	(573,000)	
Percent change from 04-08*		32%	-8%	-11%	

Table 9b. BOF 244 - Alter SE AK Allocation Agreement to include only NSRAA & SSRAA. NSRAA data includes value from NSRAA's portion of Boat Harbor/Limestone Chum.

b. Management options

Name	Description	Comments	Project	Model Results
Deep Inlet 1:0 SN:GN	Look at Deep Inlet without Gillnet		Deep Inlet	Shift 360,000 chum from GN to SN
Lynn Canal Troll	Allow trolling in Lynn Canal		DIPAC chum	Might shift 50,000+ chum from gillnet to troll; part of catch might be shift from CR

c. New (or increased) Production

Name	Description	Comments	Project	Model Results
Sitka Coho Program	2 million smolt release in Sitka area	In Progress	NSRAA Coho	Added contribution by gear: 72K troll, 12K seine, 12K gillnet
Deer Lake Coho Expansion	1.5 million smolt release from Deer Lake	In Progress	Deer Lake Coho	Added contribution by gear: 35K troll, 16K seine
Gunnuk Creek Hatchery Chum Program		65M Permitted capacity		
AKI Chum Program		30M Permitted capacity		
AKI Coho Production	See below.	In Progress		Added contribution by gear: 52K troll, 2K seine
Bakewell Lake Coho		First adults in 2010		

AKI Coho – (Increased production & survival issue) The AKI coho program has increased smolt numbers to 2.5 M (from 1.8 M) for the past 3 releases, and plans to continue in the 2.5-3M range. Marine survival rates have been lower than average for the past 5-yr period. There is potential of adding 55 K or more coho, primarily to the troll contribution.

d. Marine survival considerations – some "what-if" scenarios.

Name	Description	Comments	Project	Model Results
NSRAA LL Chum – higher survival HF	See below.		Hidden Falls Chum	Adds 38,000 chum to seine.
NSRAA LL Chum – higher survival DI	See below.		Deep Inlet Chum	Adds 45,000chum: 7K troll, 24K seine, 14K gillnet
AKI Coho	Included above in production section			

NSRAA LL Chum - Survivals for NSRAA Late-Large (LL) Chum survival has only been about 60% of regular chum rearing. We are suspending LL rearing; this will increase survival for a portion of the run, adding contribution to seiners at HF and all groups at Deep Inlet.

e. Adjustments to current model

Name	Description	Comments	Project	Model Results
Re-Allocate Model % Ranges	Rework Allocation percentages – for example reduce troll and divide reduction among NET groups		All	

Rebalancing worksheet

This worksheet tracks potential changes to programs to demonstrate how changes might affect the rebalancing of the enhanced salmon allocation. The worksheet starts with the calculated amount each gear group is over or under. Estimates of shifts in value are entered for proposed changes; the worksheet adds or subtracts from the "current" amount for each gear group, resulting in a new estimate at the bottom of the sheet.

Rebalancing Ideas / Worksheet

			Troll	Purse	Drift	
	past 5-yr avg.	24,105,000	4,555,000	9,643,000	9,907,000	current
	upcoming 5-yr avg.	24,105,000	6,938,000	10,935,000	6,232,000	target

		Troll	Purse	Drift	Assumptions
	Amount Over / (Under)	(2,383,000)	(1,292,000)	3,675,000	
	% Over / Under	-52%	-13%	37%	
	Possible changes:				
	Management				
BOF 273-274	Deep Inlet: 1:1 SN:GN		684,900	(816,599)	model 5-yr averages
BOF 267	Nakat Inlet 1:1 SN:GN		161,929	(193,067)	model 5-yr averages
BOF 271	Anita Bay 2:1 SN:GN early season		62,501	(74,519)	model 5-yr averages
BOF 268	Neets Bay		12,050	(14,367)	model 5-yr averages
	Lynn Canal Troll				
	New (or increased) Production				
	Sitka Coho Program	750,816	45,144	95,726	model 5-yr averages
	Deer Lake Coho Expansion	359,720	61,934		model 5-yr averages
	Gunnuk Creek Chum Program				
	AKI Chum Program				
	Bakewell Lake Coho	205,400	27,500	127,400	model 5-yr price; 10 lb
	Marine Survival				
	AKI Coho	537,119	9,092		model 5-yr averages
	NSRAA LL - HF higher survival		121,540		model 5-yr averages
	NSRAA LL - DI higher survival	24,283	75,947	54,479	model 5-yr averages
	Total	1,877,338	1,262,537	(820,946)	

	Troll	Purse	Drift	Total
Sum of changes:	1,877,338	1,262,537	(820,946)	2,318,930
New estimate:	6,432,338	10,905,537	9,086,054	26,423,930
Percentage after changes:	24%	41%	34%	100%
Mid-point of ranges:	29%	45%	26%	100%
	-4%	-4%	9%	

Table 10. Rebalancing worksheet (Excel file).

In the example above, trollers are under by $2.38M. (This is the difference between current and target amounts.) If all the changes listed went into effect (and value assumptions were realistic), they would pick up $1.88 M, putting them within 4% of their mid-point.

Note value shifts are not dollar for dollar when shifting from one gear group to another. This is because the model uses 5-year averages for price and weight by gear.

Rebalancing Ideas / Worksheet

			Troll	Purse	Drift	
	past 5-yr avg.	24,105,000	4,555,000	9,643,000	9,907,000	current
	upcoming 5-yr avg.	24,105,000	6,938,000	10,935,000	6,232,000	target

		Troll	Purse	Drift	Assumptions
	Amount Over / (Under)	(2,383,000)	(1,292,000)	3,675,000	
	% Over / Under	-52%	-13%	37%	
	Possible changes:				
	Management				
BOF 273-274	Deep Inlet: 1:1 SN:GN		684,900	(816,599)	model 5-yr averages
BOF 267	Nakat Inlet 1:1 SN:GN		161,929	(193,067)	model 5-yr averages
BOF 271	Anita Bay 2:1 SN:GN early season		62,501	(74,519)	model 5-yr averages
BOF 268	Neets Bay		12,050	(14,367)	model 5-yr averages
	Lynn Canal Troll				
	New (or increased) Production				
	Sitka Coho Program	750,816	45,144	95,726	model 5-yr averages
	Deer Lake Coho Expansion	359,720	61,934		model 5-yr averages
	Gunnuk Creek Chum Program				
	AKI Chum Program				
	Bakewell Lake Coho	205,400	27,500	127,400	model 5-yr price; 10 lb
	Marine Survival				
	AKI Coho	537,119	9,092		model 5-yr averages
	NSRAA LL - HF higher survival		121,540		model 5-yr averages
	NSRAA LL - DI higher survival	24,283	75,947	54,479	model 5-yr averages
	Total	1,877,338	1,262,537	(820,946)	

	Troll	Purse	Drift	Total
Sum of changes:	1,877,338	1,262,537	(820,946)	2,318,930
New estimate:	6,432,338	10,905,537	9,086,054	26,423,930
Percentage after changes:	24%	41%	34%	100%
Mid-point of ranges:	29%	45%	26%	100%
	-4%	-4%	9%	

Adjust Allocation Model

Re-Allocate Model % Ranges -3.0%; apportioned per current net group ratio

	Troll	Purse	Drift	Total
Sum of changes:	1,877,338	1,262,537	(820,946)	2,318,930
New estimate:	6,432,338	10,905,537	9,086,054	26,423,930
Percentage after changes:	24%	41%	34%	100%
Mid-points with Troll % reduction:	26%	47%	27%	100%
	-1%	-6%	7%	

Table 11. Rebalancing worksheet with addition of Adjustment of Allocation Percentages (Excel file).

There has been discussion of reworking the allocation ranges. Above is an example showing a reduction of 3% in the Troll Allocation – with the 3% being split per the ratio of seine to gillnet; approximately 2% to seine and 1% to gillnet.

Appendix

Allocation Summary
SE Enhanced Salmon Value by Gear & Project

2007, 2008 Preliminary

Species	(All)
Sale Type	(All)
Gear	seine

Sum of Value	Year					
Project	2004	2005	2006	2007	2008	Grand Total
Hidden Falls	1,933,375	897,846	5,506,430	1,623,058	10,741,215	20,701,923
Medvejie/Deep Inlet	1,574,736	1,356,561	3,410,691	318,512	2,048,739	8,709,239
Kendrick	46,915	316,418	1,987,191	2,024,490	2,378,337	6,753,351
Neets Bay	237,321	316,738	508,795	1,103,386	711,500	2,877,740
Anita Bay	48,235	207,123	1,188,730	367,401	536,128	2,347,617
Nakat	186,146	361,330	1,188,836	132,670	65,418	1,934,400
(blank)	480,340	178,145	363,088	172,159		1,193,731
AKI Pink	203,158	320,577	189,236	404,636	42,233	1,159,840
Snettisham	507,949	188,466	92,504	150,905	3,304	943,127
Amalga Harbor	142,218	84,110	243,547	44,002	19,667	533,545
Gastineau Channel	46,869	23,861	227,797	67,719	25,571	391,818
Boat Harbor	103,431	6,124	72,768	26,692	21,635	230,651
Medvejie	15,313	18,242	7,963	29,644	130,222	201,384
Limestone Inlet	12,929	4,393	21,171	16,226	9,600	64,318
AKI Chum			4,665	22,667	21,833	49,165
Herring Cove	3,071	6,269	4,765	7,074	14,076	35,255
Deer Lake	3,452	8,308	19,043	1,862	-	32,666
AKI Coho				19,924	-	19,924
Macaulay	7,049	3,814	9	1,416	-	12,289
Burnett Inlet	3,474	232	-	6,421	1,564	11,691
Neck Lake	3,741	-	315	3,924	1,564	9,544
Crystal Lake	802	696	-	-	-	1,498
Earl West	615					615
AKI King					-	-
Shamrock Bay	-					-
Grand Total	5,561,138	4,299,254	15,037,545	6,544,788	16,772,607	48,215,332

Table A1. Value to seine by enhancement project, 2004-2008.

Allocation Summary
SE Enhanced Salmon Value by Gear & Project

2007, 2008 Preliminary

Species	(All)
Sale Type	(All)
Gear	gillnet

Sum of Value	Year					
Project	2004	2005	2006	2007	2008	Grand Total
Boat Harbor	848,868	415,347	1,825,103	1,308,718	2,877,170	7,275,205
Gastineau Channel	199,690	240,225	1,340,007	1,642,342	3,767,090	7,189,355
Medvejie/Deep Inlet	1,123,885	1,427,783	2,215,109	344,786	1,232,587	6,344,150
Amalga Harbor	801,576	261,789	1,221,314	802,831	2,995,644	6,083,154
Anita Bay	251,048	561,209	1,609,846	1,387,626	1,180,358	4,990,087
Nakat	354,902	352,418	611,038	1,000,188	1,683,076	4,001,622
Neets Bay	298,621	453,145	839,800	788,438	973,423	3,353,426
Snettisham	1,130,764	318,521	1,212,949	249,987	286,170	3,198,391
(blank)	785,144	560,442	568,562	739,381		2,653,529
Limestone Inlet	137,524	83,034	274,833	343,001	849,085	1,687,476
Medvejie	48,964	44,474	35,115	107,661	505,515	741,727
Kendrick	10,676	45,752	254,877	183,639	188,735	683,679
Neck Lake	145,984	64,191	44,602	94,054	106,891	455,722
Herring Cove	16,064	19,177	36,521	37,437	108,129	217,328
Burnett Inlet	8,814	7,433	8,192	38,209	105,394	168,042
Crystal Lake	6,127	32,124	49,210	38,052	41,380	166,894
Macaulay	19,132	4,318	22,347	5,320	31,501	82,617
Hidden Falls	14,542	16,204	15,944	2,892	17,877	67,459
Earl West	56,443					56,443
Haines/ 17 Mile IB	4,706	3,852	5,139	2,844	28,062	44,603
Haines/ Herman Crk IB	4,695	2,666	1,371	11,690	23,095	43,517
Chilkat Lake IB	-	16,798				16,798
Haines/ 31Mile IB	875	189	-	4,377	4,967	10,408
AKI Coho				639	-	639
Shamrock Bay		547				547
AKI King					-	-
Grand Total	6,269,043	4,931,637	12,191,878	9,134,114	17,006,149	49,532,821

Table A2. Value to gillnet by enhancement project, 2004-2008.

Allocation Summary
SE Enhanced Salmon Value by Gear & Project

2007, 2008 Preliminary

Species	(All)
Sale Type	(All)
Gear	troll

Sum of Value	Year					
Project	2004	2005	2006	2007	2008	Grand Total
Neets Bay	1,005,440	603,038	676,050	1,006,542	1,325,053	4,616,122
Hidden Falls	706,315	571,429	1,037,384	326,442	1,688,924	4,330,493
Medvejie	587,830	384,713	160,299	607,670	1,515,124	3,255,637
Medvejie/Deep Inlet	248,860	499,941	526,148	545,406	366,995	2,187,351
AKI Coho	120,704	85,311	194,165	787,222	360,357	1,547,760
Herring Cove	290,908	269,224	252,512	327,050	348,480	1,488,174
Deer Lake	130,516	370,189	489,878	71,291	138,258	1,200,133
(blank)	170,393	369,267	245,075	318,976		1,103,711
Anita Bay	66,347	94,418	209,717	381,225	231,444	983,151
Macaulay	144,867	75,303	103,813	73,094	177,404	574,481
Crystal Lake	51,807	89,087	84,779	172,539	156,936	555,148
Nakat	63,125	44,772	96,869	165,521	118,575	488,861
Shamrock Bay	76,421	91,026	69,267			236,714
AKI King	-	21,097	35,203	33,870	6,413	96,582
Neck Lake	19,976	2,634	20,129	14,691	20,553	77,983
Burnett Inlet	2,397	1,317	2,516	7,835	15,810	29,875
Earl West	1,118					1,118
Kendrick	-	300				300
AKI Chum					-	-
Grand Total	3,687,025	3,573,066	4,203,802	4,839,375	6,470,326	22,773,594

Table A3. Value to troll by enhancement project, 2004-2008.

SE Allocation
SE Enhanced Salmon
Nakat Inlet THA 101-10
Proposal: Change Ratio of Seine : Gillnet from 1:2 to 1:1

Species	CHUM
Harvest	TERM
Area Value	10110

Sum of N Catch	Gear Class			
Year	TROLL	PURSE	DRIFT	Grand Total
1999		44,866	2,879	47,745
2000		51,731	19,697	71,428
2001		36,449	32,719	69,168
2002		46,263	16,408	62,671
2003		87,930	39,261	127,191
2004		114,883	24,892	139,775
2005		138,041	12,848	150,889
2006		339,339	26,113	365,452
2007		13,084	156,552	169,636
2008		-	79,725	79,725
Grand Total	-	872,586	411,094	1,283,680
3 year average(2004-06)	-	197,421	21,284	218,705
Percent of Total	0%	90%	10%	100%
5 year average(2004-08)		121,069	60,026	181,095
Percent of Total	0%	55%	27%	83%

Proposal = 1 Seine : 1 Gillnet

	troll	seine	gillnet	Grand Total
New percent:	-	95%	5%	100%
New Fish Estimate	-	172,041	9,055	181,095
Percent of Total	0%	95%	5%	100%

	troll	seine	gillnet	Grand Total
# Fish Change from Present	-	50,971	(50,971)	(37,610)

Model 5yr avg price	$ 0.42	$ 0.37	$ 0.42
Model 5yr avg weight	8.69	8.68	9.04

	troll	seine	gillnet	Grand Total
$$ Change from Present	$ -	$ 161,929	$ (193,067)	$ (31,137)

Table A4. BOF 267 Nakat Inlet THA.

Assumptions: If change were made to 1:1 schedule, gillnet portion would be about half of that under 2:1 schedule. (Split would change from 90%-10% (based on 2004-06 period with 2:1 schedule) to 95%-5%).

SE Allocation
SE Enhanced Salmon
Neets Bay SHA 101-95
Proposal: All catch goes to net group that is below their range

Species	CHUM
Harvest	TERM
Area Value	10195

Sum of N Catch	Gear Class			
Year	TROLL	PURSE	DRIFT	Grand Total
1999				
2000	1,028	984	45	2,057
2001	166,394		3	166,397
2002		9,156	13,466	22,622
2003	72,535	45,969	37,083	155,587
2004		5,711	10,829	16,540
2005	7,764	1,083	5,599	14,446
2006	10,085	14	2,320	12,419
2007	4,977	189	74	5,240
2008	22	235	143	400
Grand Total	262,805	63,341	69,562	395,708
5 year average(2004-08)	5,712	1,446	3,793	9,809
Percent of Total	58%	15%	39%	100%

Proposal = All to group below their range

(Seiners are below range / so set gillnet to 0%)

	troll	seine	gillnet	Grand Total
Change:	1.00	3.62	-	
New Fish Estimate	5,712	5,239	-	10,951
Percent of Total	52%	48%	0%	100%

	troll	seine	gillnet	Grand Total
# Fish Change from Present	-	3,793	(3,793)	1,142

Model 5yr avg price	$ 0.42	$ 0.37	$ 0.42
Model 5yr avg weight	8.69	8.68	9.04

	troll	seine	gillnet	Grand Total
$$ Change from Present	$ -	$ 12,050	$ (14,367)	$ (2,317)

Table A5. BOF 268 Neets Bay SHA

Assumptions: Seiners are currently below their range, 100% would go to seine.

SE Allocation
SE Enhanced Salmon
Anita Bay SHA 107-35
Proposal: Change Ratio of 1 Seine : 2 Gillnet to 2 Seine : 1 Gillnet from beginning of season thru July 31
Aug 1 - end of season remains at 1 Seine : 2 Gillnet

5-year average (2004-08)

Period	PURSE	DRIFT	Grand Total
1. WEEKS 23-31	65,579	35,996	101,575
2. WEEKS 32-40	17,374	25,927	43,301
Grand Total	82,953	61,923	144,876
Percent of Catch	57%	43%	100%

CURRENT		PROPOSED		Change (Ratio)		Estimated Catch		
SN	GN	SN	GN	SN	GN	PURSE	DRIFT	Grand Total
1	2	2	1	1.3	0.45	85,252	16,322	101,575
1	2	1	2	1	1	17,374	25,927	43,301
						102,627	42,249	144,876
						71%	29%	100%

Change from present (Ratio) 1.24 0.68

	troll	seine	gillnet	Grand Total
# Fish Change from Present		19,674	(19,674)	-

Model 5yr avg price	$ 0.42	$ 0.37	$ 0.42
Model 5yr avg weight	8.69	8.68	9.04

	troll	seine	gillnet	Grand Total
$$ Change from Present	$ -	$ 62,501	$ (74,519)	$ (12,018)

Table A6. BOF 271 Anita Bay SHA

Assumptions: In changing from a 1:2 to 2:1 schedule for the early season fishing, seiners might catch 30% more fish than under the current 1:2 schedule. (The 30% is simply a guess, by plugging varying percent increases into the worksheet, results are recalculated. Note the 1.3 in the blue cell = 130%, or a 30% increase from present level.) Also - If you go much beyond a 30% increase, the gillnet catch quickly approaches 0.

SE Allocation
SE Enhanced Salmon
Deep Inlet THA 113-38
Proposal: Change Ratio of 1 Seine : 2 Gillnet to 1 Seine : 1 Gillnet

Numbers of Fish

Sale Type	(All)
Species	450 Chum
Agency	(All)

Current = 1 Seine : 2 Gillnet

Sum of Contribution		Gear			
Project	Year	troll	seine	gillnet	Grand Total
Medvejie/Dee	2004	145,858	1,023,757	421,070	1,590,685
	2005	165,046	564,171	430,655	1,159,872
	2006	139,291	1,105,493	643,127	1,887,911
	2007	166,602	104,985	105,209	376,796
	2008	51,271	340,002	196,514	587,787
Grand Total		668,068	3,138,408	1,796,575	5,603,051
5 year average		133,614	627,682	359,315	1,120,610
Percent of Total		12%	56%	32%	100%

Proposal = 1 Seine : 1 Gillnet

	troll	seine	gillnet	Grand Total
Change:	1.00	1.34	0.40	
New # Fish Estimate	133,614	843,271	143,726	1,120,610
Percent of Total	12%	75%	13%	100%

	troll	seine	gillnet	Grand Total
Fish Change from Present	-	215,589	(215,589)	-

Model 5yr avg price	$ 0.42	$ 0.37	$ 0.42
Model 5yr avg weight	8.69	8.68	9.04

	troll	seine	gillnet	Grand Total
$$ Change from Present	$ -	$ 684,900	$ (816,599)	$ (131,699)

Table A7. BOF 273-274 Deep Inlet THA

Assumptions: In changing from a 1:2 to 1:1 schedule, seiners might catch 40% more fish than under the current 1:2 schedule.

SE Allocation
SE Enhanced Salmon
NSRAA Deer Lake and Sitka Coho Programs
Proposal: Production Increases

SITKA COHO

Smolt	M.S.	Adults
2,000,000	8%	160,000

	Troll	Purse	Drift	
Harvest rate:	45%	7.5%	7.5%	60%
Catch:	**72,000**	**12,000**	**12,000**	**96,000**
model 5 yr ave wt:	6.6	6.84	8.14	
model 5 yr ave price:	$ 1.58	$ 0.55	$ 0.98	
Value est:	$ 750,816	$ 45,144	$ 95,726	$ 891,686

DEER LAKE COHO

Smolt	M.S.	Adults
1,500,000	10%	150,000

	Troll	Purse	Drift	
Harvest rate:	40%	12.5%	0.0%	53%
Catch:	**60,000**	**18,750**	**-**	**78,750**
Current Prod. 5 yr avg:	25,504	2,287	-	
New Prod.	**34,496**	**16,463**	-	**50,959**
model 5 yr ave wt:	6.6	6.84	8.14	
model 5 yr ave price:	$ 1.58	$ 0.55	$ 0.98	
New Prod. Value est:	$ 359,720	$ 61,934	$ -	$ 421,654

Table A8. NSRAA Coho Production Changes

Assumptions: Both projects are ongoing, with room for growth. Assumptions as to production level, harvest rates, survival are shown.

SE Allocation
SE Enhanced Salmon
SSRAA Bakewell Lake Coho Program
Proposal: Production Increases

Bakewell Lake Coho

Smolt	M.S.	Adults
500,000	8%	40,000

	Troll	Purse	Drift	
Harvest rate:	32.5%	12.5%	32.5%	78%
Catch:	**13,000**	**5,000**	**13,000**	**31,000**
model 5 yr ave wt:	6.6	6.84	8.14	
model 5 yr ave price:	$ 1.58	$ 0.55	$ 0.98	
Value est:	$ 135,564	$ 18,810	$ 103,704	$ 258,078
user 5 yr ave wt:	10	10	10	
user 5 yr ave price:	$ 1.58	$ 0.55	$ 0.98	
Value est:	$ 205,400	$ 27,500	$ 127,400	$ 360,300

Table A9. SSRAA Coho Production Changes

Assumptions: This is a new project. Assumptions as to production level, harvest rates, survival are shown.

AKI COHO

If……..		
smolt		2,500,000
marine survival		7.5%
harvest rate		45%
Contrib est		84,375

		Contrib. Est.	5-yr (2003-08)	Increase
Troll contrib est	96%	81,000	29,333	51,667
Seine contrib est	4%	3,375	1,117	2,258
		84,375	30,450	53,925

Assuming a 2 M smolt release, 10% survival and 45% harvest rate, AKI might contribute 60,000 more coho than for the past 5 year average.

Assuming a 2 M smolt release, 8% survival and 45% harvest rate, AKI might contribute 40,000 more coho than for the past 5 year average.

	troll	seine	gillnet	Grand Total
# Fish Change from Present	51,667	2,258	-	53,925

	troll	seine
Model 5yr avg price	$ 1.58	$ 0.58
Model 5yr avg weight	6.60	6.89

	troll	seine	gillnet	Grand Total
$$ Change from Present	$ 537,119	$ 9,092	$ -	$ 546,211

Table A10. AKI Coho Production Changes

Assumptions: This project is ongoing. Smolt numbers have recently increased; Port Armstrong has experienced a period of lower marine survival. There is room for growth and improved survivals from the past 5-year period. Coho of the same stock have performed well at nearby Deer Lake and at Hidden Falls. Assumptions as to production level, harvest rates, survival are shown.

DEEP INLET CHUM
Suspension of LL rearing program

	TOTAL RETURN	Est. Without LL Rearing: increase 113%	incr comm contrib
2004	2,161,220	2,161,220	0
2005	1,725,312	1,725,312	0
2006	2,303,503	2,303,503	0
2007	803,582	908,048	104,466
2008	924,977	1,045,224	120,247
	7,918,594	8,143,307	224,713
	1,583,719	1,628,661	**44,943**

Harvest split 5yr avg>	15%	53%	32%	
	troll	seine	gillnet	Grand Total
Fish Change from Present	6,653	23,906	14,383	44,943

Model 5yr avg price	$ 0.42	$ 0.37	$ 0.42
Model 5yr avg weight	8.69	8.68	9.04

	troll	seine	gillnet	Grand Total
$$ Change from Present	$ 24,283	$ 75,947	$ 54,479	$ 154,710

Table A11. NSRAA Chum Production Changes – Deep Inlet

Hidden Falls CHUM
Suspension of LL rearing program

	TOTAL RETURN	Est. Without LL Rearing: increase 105.5%	incr comm contrib
2004	1,913,216	1,913,216	0
2005	806,561	806,561	0
2006	2,185,079	2,185,079	0
2007	1,227,094	1,294,584	67,490
2008	2,250,867	2,374,665	123,798
	8,382,817	8,574,105	191,288
5 yr avg	1,676,563	1,714,821	**38,258**

	troll	seine	gillnet	Grand Total
Fish Change from Present		38,258		38,258

Model 5yr avg price	$ 0.42	$ 0.37	$ 0.42
Model 5yr avg weight	8.69	8.68	9.04

	troll	seine	gillnet	Grand Total
$$ Change from Present	$ -	$ 121,540	$ -	$ 121,540

Table A12. NSRAA Chum Production Changes – Hidden Falls

Assumptions: NSRAA LL chum have underperformed regular rearing. By suspending the LL program, the portion that were LL will survive at the same rate as the regulars, resulting in higher adult returns.