

# Bristol Bay Economic Development Corporation

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PO Box 21668  
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Via email to: [salmonbycatcheis@noaa.gov](mailto:salmonbycatcheis@noaa.gov)

Dear Mr. Mecum,

Please find attached comments by the Bristol Bay Economic Development Corporation on the Bering Sea Chinook Salmon Bycatch Management Draft EIS/RIR/IRFA.

In brief, we find this document sufficient to take final action, and recommend that the Council adopt version 2 of the Preliminary Preferred Alternative (PPA2), with one change, and with two additions.

The change is to the weighting of history to allocation in calculating sector caps, from 75:25 history to pollock allocation to 25:75. All other aspects of the sector cap calculations, specifically including the adjustment of CDQ and CDQ harvesting sector history as described in the Council's June 2008 motion, would remain unchanged.

The additions are:

1. adoption of the B season triggered closure analyzed in Alternative 3 applied at the coop or entity level such that if October 7 or any date thereafter, an entity has met or exceeded its share of the applicable bycatch cap, it is subject to the closure. The cap share would be calculated using the methodology of PPA2 modified by the change above, but for a cap level of 29,300; and
2. that the current rolling hot spot system and exemption from the savings area closures be left in place such that the hard cap and triggered closure are in addition to status quo.

In our opinion, the two changes will provide adequate protection for Chinook stocks in low encounter years and will be much simpler to implement than the incentive plans currently being proposed.

The agency would have to document how these components would interact prior to release of the final EIS, but as all three components have been analyzed, this should not delay final action.

We note that the process envisioned in PPA1 has significant weaknesses. The Council's SSC spelled out many at the February 2008 Council meeting. In our opinion, PPA1 is not a viable option for that reason alone.

Nor do we believe that the higher cap is justified. The direct correlation between encounters and abundance is not borne out by the analysis, yet that underpins the argument for a higher cap in exchange for an incentive plan. It's fairly clear that the

recent high encounter years are due to other factors, such as increased overlap in the ranges of Chinook and pollock, as the EIS notes. In years when high encounters don't correlate with high abundance, a higher cap simply translates to a higher rate of interception and larger impact to the other users of Chinook and to the resource.

Low encounter years don't necessarily correspond to low abundance either, and there are other effective ways to limit bycatch at those times, such as the current RHS system.

Lastly, we are involved in nearly all sectors of the pollock industry, and have paid close attention to Chinook bycatch avoidance efforts for years. It is quite clear that the industry will make considerable efforts to avoid Chinook when faced with a hard cap, and that using historic bycatch with no savings due to avoidance measures greatly overstates the impact of a hard cap. As Kochin et al (almost) acknowledge in their analysis, the industry could probably have stayed under a hard cap of 68,600 if they'd had the current RHS system, including the fixed A season closure in place, and had not fished in October.

Our analysis indicates that parts of the industry may struggle to harvest their TAC share under PPA2, but that most operators will be impacted far less than the RIR suggests. Using a retrospective analysis similar to that used in the RIR but assuming savings similar to those suggested by Kochin et al shows that only seasons similar to 2006 and 2007 A seasons would have been challenging. In our opinion, a 47,591 hard cap would focus the necessary minds on the problem and the likelihood of foregone harvest is low.

Finally, we support implementation in 2011, and do not want that delayed. If something we're proposing would require analysis that would delay that implementation date, the most important thing to us is to get the 47,591 hard cap in place as described in PPA2.

Please don't hesitate to call my staff or me if any clarifications are needed.

Sincerely

A handwritten signature in black ink, appearing to read "H. R. Samueslen Jr.", written in a cursive style.

H. R. Samueslen Jr  
President and CEO

## **BBEDC Salmon Bycatch DEIS Comments**

### ***1. The EIS does a good job of analyzing the effects of the caps and triggered closures given the best available science. One minor suggestion:***

**Section 3.3.2 – Salmon genetics for non-western Alaska stocks are not in close agreement with the scale analysis, and there are questions concerning N AK Peninsula and upper Yukon contributions to bycatch. Please refer to Page 125 Table 3-12.**

The data for western Alaska stocks (Bristol Bay and north) from the three studies cited in the EIS are reasonably consistent in the aggregate and are good enough to use as basis to protect those stocks. The extensive work done by the analysts to deal with the less than ideal sampling for the Seeb et al study is to be commended.

Summing Seeb et al figures from western AK and Yukon segments yields 54%, which is in reasonable agreement with the scale analysis done by Myers et al at 56% and 60% for the core bycatch stocks. That said, there are some limitations to sampling methodology for the Seeb et al study in particular, and the need for additional work characterizing the stock composition of the Chinook bycatch is obvious.

The Seeb et al N. AK Peninsula contribution to the pollock bycatch seems highly unlikely, though if true could explain their very weak status. These stocks are quite small, and if the stock composition is true, they contributed 10,810 to the bycatch in 2006. This probably exceeds total run size for those rivers.

The composition of the rest of the bycatch, totaling 40-46%, is quite variable. Do Cook Inlet stocks contribute 4%, 17% or 31% of the bycatch? Are Russian stocks 2%, 5% or 14%? Are PNW stocks 0% or 23%?

Given this variability, it's also possible that the Upper Yukon stock components' migration patterns and degree of interception by the pollock fishery are not well understood. While it was 3% in the 2006 samples analyzed by Seeb et al, given these stocks' magnitude and importance, it may be prudent to assume that these stocks may not have shown up proportionally in the less than optimally collected, spatially and temporally limited samples analyzed. The Upper Yukon stocks might show up at higher levels at other times and their interception rate may vary more than the core stocks. The last caveat may also apply to the N. AK Peninsula, PNW, Cook Inlet and Russian stocks.

### ***2. Comment on Alternatives***

#### **A. Justification for the Use of a Blend of History and Allocation in Allocating Hard Caps to Sectors in PPA1 and PPA2.**

As we testified before the Council on several occasions, some cooperatives, or companies within cooperatives have persistently high bycatch rates compared to others within their coop or sector. The performance of companies or coops with large AFA catch shares within a sector can also affect the sector's average markedly, particularly Trident in the inshore sector and American in the catcher/ processor (C/P) sector.

There are various explanations for why a company would have higher rates than their peers. For example, some companies only produce fillet products, not surimi, for which they require fresher and larger pollock, which limits the areas where they can find suitable fish. Other

companies with high horsepower vessels target the Pribilof Canyon (mushroom) area during A season, where roe percentages are the highest but where relatively high Chinook bycatch rates occur.

Some companies have paid meal prices for fish that wasn't suitable for fillets despite having surimi capacity, forcing their fleets to fish close to the plant in areas that have higher bycatch rates. Companies that start B season late and fish into late October also experience much higher B season rates.

Lastly, one company reportedly abandoned their rotation schedule and ordered their vessels waiting at the dock to fill up during the 24 hours between a rolling hot spot closure announcement and when the closure took effect during an extraordinarily high encounter period, resulting in very high bycatch.

It appears that companies with rates higher than their peers are making economic choices that in some cases have changed over time and in most cases can be changed in the future without additional capital expenditures, though product values may suffer. This choice differs substantially from true operational constraints such as vessel size and distance from the grounds.

### *Analysis*

After estimates are made to fill various gaps in the available AFA coop report data, the Chinook bycatch by sector is projected assuming that the highest bycatch participants in each sector can achieve the same rate as the average of the others in their sector for the year as a whole. The recalculated sector bycatch is totaled to recalculate sector shares after savings. For details please refer to Appendix A.

The resulting average share of bycatch after savings by sector follows in Table 1 and is compared to the historic shares referenced in the PPA and the shares resulting from blending in pollock allocations at a 25% weighting.

Table 1.

	<b>Sector Bycatch Shares after Savings</b>							Straight <u>Historic</u>	Blended <u>@ 25%</u> <u>Alloc.</u>	Blended <u>@ 30%</u> <u>Alloc.</u>
	<u>2007</u>	<u>2006</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>	<u>2002</u>	<u>2002-06</u> <u>Average</u>			
Inshore	62.3%	64.5%	68.9%	63.2%	48.7%	55.9%	60.2%	67.0%	61.5%	60.4%
Motherships	5.9%	7.0%	4.8%	7.4%	8.5%	9.7%	7.5%	7.1%	7.6%	8.0%
Offshore	24.1%	22.2%	20.1%	22.4%	33.1%	25.7%	24.7%	19.9%	23.9%	24.7%
CDQ	7.7%	6.4%	6.2%	7.0%	9.6%	8.7%	7.6%	6.0%	7.0%	7.2%

As demonstrated in Appendix A, by far the largest savings would be achieved inshore, 73% of the savings with 45% of the pollock. The result shows that using a 25% blend doesn't quite bring the sector shares to the levels that would result if the companies with the highest rates reduced Chinook bycatch to the rates the others in their sector. A 30% blending would be closer.

It is also apparent that the difference is not due to vessel size limitations inshore. As seen in Table 2, some of the coops with the worst histories have relatively high percentages of larger vessels, while some of the best performing coops have very small fleets, with no vessels likely making the run to Zemchug Canyon in B season, one way to improve bycatch rates.

## BBEDC Comments on Salmon Bycatch DEIS

Table 2.

Inshore	Chinook/mt 2002-06 Average	Percentage of Sector Mean	One of worst ?? Times	2002-06 Ave. % of Deliveries			
				<101'	101' to 125'	125' to 148'	>148'
Unalaska (Alyeska)	0.092	178%	5	1%	23%	44%	32%
Akutan + Arctic (Trident)	0.062	104%	2	13%	26%	12%	48%
Northern Victor (Icicle)	0.054	106%	2	16%	57%	26%	0%
Unisea	0.047	91%	1	0%	43%	0%	57%
Westward	0.049	90%	-	0%	21%	19%	60%
Peter Pan	0.041	67%	-	39%	60%	0%	2%

As mentioned previously, one major difference between sectors in B season and for the year as a whole is the amount of harvest taken in late October. Due to confidentiality restrictions, weekly catch and bycatch data were not available for the mothership sector and the CDQ data was quite spotty, so it was blended with the CP data. Please refer to Appendix C for details.

October Harvests		C/P + CDQ		Inshore		MS
		<u>% of B Pollock Catch</u>	<u>% of B Chinook Bycatch</u>	<u>% of B Pollock Catch</u>	<u>% of B Chinook Bycatch</u>	(no data)
2000	Before Oct.	82%	54%	80%	8%	
	First week Oct.	7%	17%	8%	30%	
	Thereafter	11%	30%	12%	63%	
2001	Before Oct.	86%	20%	86%	38%	
	First week Oct.	5%	5%	7%	18%	
	Thereafter	9%	75%	7%	43%	
2002	Before Oct.	99%	65%	91%	41%	
	First week Oct.	1%	21%	5%	15%	
	Thereafter	0%	14%	4%	44%	
2003	Before Oct.	96%	78%	91%	31%	
	First week Oct.	3%	12%	3%	26%	
	Thereafter	1%	11%	6%	43%	
2004	Before Oct.	97%	89%	89%	34%	
	First week Oct.	3%	2%	2%	11%	
	Thereafter	0%	9%	9%	55%	
2005	Before Oct.	99%	100%	89%	27%	
	First week Oct.	1%	0%	3%	19%	
	Thereafter	0%	0%	8%	54%	
2006	Before Oct.	92%	70%	84%	45%	
	First week Oct.	4%	10%	5%	10%	
	Thereafter	4%	20%	11%	46%	
02-06 Average (yrs used PPA)	Before Oct.	97%	80%	89%	36%	
	First week Oct.	2%	9%	4%	16%	
	Thereafter	1%	11%	8%	48%	
2007	Before Oct.	91%	43%	83%	26%	
	First week Oct.	2%	10%	3%	12%	
	Thereafter	7%	47%	14%	62%	

It is apparent that the inshore sector takes a substantially higher percentage of its pollock in the October fishery, and that this contributed a significant amount to their B season bycatch history. On average 2002-06, 8% of the inshore pollock catch was taken after Oct. 7, but 48%

of the Chinook. By comparison, the C/P fleet, including most of the CDQ pollock, took 1% of their pollock after Oct. 7 and 11% of their B season Chinook bycatch.

The worst year on record, 2007, was also marked by the highest recent level of October fishing, with 14% of the B season inshore pollock and 62% of the B season Chinook bycatch coming after the first week of Oct. The C/Ps with CDQ harvests took 7% of their B season pollock after the first week along with 47% of their B season Chinook.

To see what effect October fishing had on sector history, we backed out Chinook bycatch after Oct. 7 (at the gross inshore vs. CP+CDQ level) and recalculated B season history. It comes very close to the same sector shares as blending history with allocation 75:25.

	Inshore	Offshore (MS+CP+CDQ)
B History from PPA	76.2%	22.6%
B History before 10/7	70.3%	29.7%
B 75/25 Split	69.3%	30.7%

### **B. Case for setting cap lower rather than higher**

There does not appear to be a correlation between the number of bycatch encounters in the pollock fishery and the abundance level of Chinook returning to western Alaska rivers. Recent years when Chinook bycatch was highest, after adjusting for when the bycaught fish would have returned, have seen low returns, not high returns (though some of the stocks intercepted by 2007 B season bycatch will return this summer). We recognize that bycatch in the pollock fishery is not the only factor contributing to the decline of fish stocks in the rivers, however it is certainly a contributing factor and one that can easily be controlled.

With so many salmon stocks at levels triggering management or yield concerns there does need to be an emphasis on low bycatch/encounter years. However, as described in our comments on PPA2, we feel the current RHS system addresses that adequately.<sup>1</sup>

Additionally, as identified in the Nushagak Chinook Management Plan, for example, if salmon stocks are ever to rebuild, they need some years with high escapement. Particularly for Chinook, which return over multiple years, getting large year classes in to the river to reproduce will help to increase run sizes and increase returns overall as those fish mature and return to their natal streams over multiple years. Over time, even small increases in the number of fish getting back to the river should help to rebuild stocks. For some of the smaller runs (including some of those that appear in conspicuously high numbers in the bycatch) every single fish that returns to the river matters.

### **C. BBEDC Strongly Urges Adoption of PPA2 with Additions**

#### *Summary*

The EIS identifies two preliminary preferred alternative (PPA) hard cap alternatives, with one a straight hard cap of 47,591 Chinook split between sectors and seasons pushed down to the coop level (PPA2). The other (PPA1) has a split cap centered at 47,591 with a higher cap if the pollock fleet agrees on an incentive plan intended to reduce bycatch to levels less than

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<sup>1</sup> Note however that the RHS system being contemplated for inclusion with the incentive plans under PPA1 uses fixed trigger rates at relatively high levels, which significantly reduces its effectiveness in low encounter years. Thus PPA1 is substantially more dependent on the incentive plan than the current RHS to be effective in low encounter years.

47,591 most of the time and a lower cap for those vessels that choose not to participate in that incentive plan.

BBEDC does not support a higher cap in exchange for an incentive plan, and prefers that a hard cap allocated to the coop level be added to current rolling hot spot program and fixed A season closure (with the exemption from the salmon savings area closure for vessels participating in the rolling hot spot program). That would be PPA 2 overlaid on Alternative 1, Status Quo.

Overlaying a hard cap on the status quo shouldn't require significant analysis. The effects of the hard cap are already fully analyzed. The effects of the rolling hot spot system are fully analyzed. Putting the two together should provide effective low encounter avoidance under Status Quo and effective high encounter avoidance under the hard cap. It should be possible for the analysts to flesh out how the agency would implement that between final action and the final EIS without delaying implementation.

The RHS system as currently implemented (including the A season fixed closure) provides adequate protection for Chinook salmon in low encounter years. The high encounter failings of the 2007 program were partially addressed in the 2008 revisions, and a hard cap to limit total take would complete the package.

In contrast, none of the incentive plans proposed to date provide enough additional disincentive in low encounter years to justify a higher cap and higher mortality in high encounter years. All incentive plans would also add significant and unnecessary complexity, in our opinion. Keeping the rolling average trigger rates, total allowable closure areas and fixed A season closure are critical to the current RHS systems' effectiveness. Changes to apply the closures at the vessel level would improve the effectiveness and should be encouraged.

Incentive plans alone also do not have the effect of flat out prohibiting a vessel from fishing in high bycatch areas. Trying to do this through financial disincentives is far less direct than simply closing those areas as under the hot spot system. That's why the incentive plans all include a substantial rolling hot spot system.

*Adjust the ratio of history to pollock allocation to 25:75 in calculating sector caps*

Basing sector allocations on straight history rewards a bigger share of the bycatch cap to sectors with members that fish in October or otherwise have Chinook bycatch significantly higher than that of their peers. That is not fair to other sectors.

The PPAs use a blend of history and pollock allocation to address this issue and that is to be commended. In our opinion though, the PPA does not go far enough. Without access to better seasonal data, we cannot demonstrate it, but in our opinion the history component needs to be dialed back considerably to wring out the differences in behavior. We support reducing the history component in PPA 2's sector calculations to 25%.

## BBEDC Comments on Salmon Bycatch DEIS

<b>Chinook Hard Cap Split<sup>2</sup></b>		<b>Hard Cap Level</b>		<b><u>47,591</u></b>		
25/75 History/ Alloc Split				25%	75%	
70/30 Seasonal split				33,314	14,277	
		<u>Pollock Alloc</u>	<u>2000-06 History</u>		<u>Wtd Ave Alloc/History</u>	
<b>CDQ</b>						
Share of Sector Cap		10.0%	9.1%	4.0%	9.8%	8.5%
		4,759	Back calc from PPA%s			
	<u>A Season</u>	<u>B Season</u>	<u>A Season</u>	<u>B Season</u>	<u>A Season</u>	<u>B Season</u>
	3,331	1,428	3,022	571	3,254	1,214
<b>Inshore</b>						
Share of Sector Cap		45%	52.0%	76.2%	46.8%	52.8%
		21,416				
	<u>A Season</u>	<u>B Season</u>	<u>A Season</u>	<u>B Season</u>	<u>A Season</u>	<u>B Season</u>
	14,991	6,425	17,323	10,879	15,574	7,538
<b>Offshore</b>						
Share of Sector Cap		36%	31.87%	11.9%	35.0%	30.0%
		17,133	Back calc from PPA%s			
	<u>A Season</u>	<u>B Season</u>	<u>A Season</u>	<u>B Season</u>	<u>A Season</u>	<u>B Season</u>
	11,993	5,140	10,617	1,695	11,649	4,279
<b>Mothership</b>						
Share of Sector Cap		9.0%	7.7%	6.7%	8.7%	8.4%
		4,283		3,170		
	<u>A Season</u>	<u>B Season</u>	<u>A Season</u>	<u>B Season</u>	<u>A Season</u>	<u>B Season</u>
	2,998	1,285	2,555	951	2,887	1,201

Note that the change doesn't move that much of the cap around, but it in our opinion it does a better job of spreading the pain fairly. Taking CDQs for example, the estimated A season cap difference is 3,331 at 100% allocation, 3,022 at 100% history. The biggest change is to inshore B season, where 100% allocation would be yield a sector cap of 6,425, while 100% history would result in a sector cap of 10,879. The difference would be distributed to the remaining sectors fairly close to their prorata share of the pollock, as the differences between the sectors' average Chinook bycatch rates are small.

#### *Add Triggered B Season Closure*

BBEDC supports adding a triggered B season closure as described in Alternative 3, component 5, page 53, applied at the coop or entity level. The closure would be triggered for a coop or entity if on or after October 7 its total Chinook bycatch for the year to date exceeded its share of a 29,300 cap pushed down to the coop or entity level using the PPA's methodology.

Such a closure would be less restrictive than those analyzed in the EIS, as the closure would occur much later than Aug. 15, and the effects of this closure at a 29,300 cap has been analyzed.

<sup>2</sup> The table uses estimates of the C/P and CDQ sectors' history derived by backcalculation from the PPA. These are quite close, but the total of sector percentages varies slightly from 100%.



Also, closing October fishing is a relatively easy way to control salmon bycatch in years of low encounters when a hard cap alone might not be sufficient. It would also backstop transfer limits under an incentive plan if one were adopted (though we don't support PPA1).

#### **D. Comments on PPA1**

The process set up by the Council in this case is difficult to work with and has significant weaknesses as noted by the SSC at the February Council meeting. On the one hand it was an attempt to work with the industry to provide management flexibility not available in our regulatory system. On the other hand it requires strong faith that the industry will do the right thing for the salmon interests even when it's not in the pollock industry's best financial interest to do so.

The guidelines for any incentive plan under PPA1 provide for pushing sector and coop allocations down to the vessel level. While this is a laudable goal, it may have the unintended consequence of creating a disincentive to share information with other vessels, as 'I do better if you do worse' is a real consequence. One of the strengths of the current RHS system is the active, real-time information sharing. An argument can be made that more restrictive cap allocations at the coop level will do more to get the fleet to work together and address bycatch as a team effort than incentive plans, especially if some companies can figure out how to game the system despite the best efforts of the rest of the industry.

Another problem is the lack of transparency for the public. It's the nature of the beast for a civil contract. However, we also recognize the attempt to use a civil contract to provide the flexibility not available through federal regulatory channels.

We have experience with the industry's current RHS system, which was also developed outside the public review process. While we feel the current RHS system would work relatively well in conjunction with a relatively low hard cap, the simplified version proposed with incentive plans removes low trigger rates making them less effective in low encounter years, leaving only the incentive plans themselves.

PPA1 also introduces additional conditions that create the incentive for secrecy and gaming at an unacceptably high hard cap. We recommend that if PPA1 moves forward, explicit criteria for the content and evaluation of any ICA and its Incentive Plans be outlined in regulation. The guidance provided in PPA1 is so vague that it sets the bar very low.

We are very concerned about potential gaming, especially with the Financial Incentive Plan/ Undercatch Incentive Program. Some industry players have repeatedly demonstrated that they will push the envelope and actively game whatever the Council passes. This plan in particular lets large companies buy their way out of bycatch problems as just another cost of doing business. As there is no carryover effect from year to year, the cost of being below average in performance just gets dialed in as a cost. A simple cost-benefit analysis may also encourage vessels to continue to fish in areas with high bycatch rates at certain times because the penalty paid for salmon caught will still be less than the revenue generated targeting higher-value fish.

At the February 2009 Council meeting, the Commissioner of the Alaska Department of Fish and Game, the maker of the Council motion in June 2008, stated that while the industry proposed Incentive Plans met the criteria outlined in the motion, they did not meet the intent

of the motion. The motion was intended to reduce bycatch to a level below 47,591, which thus far the proponents of the Incentive Plans have failed to demonstrate they do.

BBEDC does not support either of the Incentive Plan proposals currently before the Council. The PPA1 guidance is inadequate and the bycatch price offered for Incentive Plans is way too high. The plans are quite complex, and frankly we're having a hard time trusting the industry due to some participants who appear to be operating in bad faith, despite the best efforts of the majority. For additional comments on the Incentive Plans, please refer to Appendix B.

### **3. *Comments on the RIR***

#### **A. Directed Chinook taken vs. incidental catch in sockeye or chum fisheries**

One weakness of the commercial fisheries catch data presented in the EIS is that there is no distinction for Chinook caught in a directed fishery. The difference in value to the fisherman can be profound. For example on the Nushagak, in 2006 the average price for Chinook in the June directed fishery was \$2.50-3.50/lb depending on market, while for the year as a whole it averaged \$0.71/lb. Nearly all of the Chinook were caught incidentally in the sockeye fishery at far less value. In 2007, the RIR shows a commercial harvest of 51,350 Chinook, but there was essentially no directed fishery.

This understates the potential impact of returning more Chinook to the nearshore environment were they could contribute to a directed Chinook fishery.

#### **B. The RIR overstates the impact to pollock fleet as there is there is not sufficient certainty about behavior changes**

Industry will not sit passively when a hard cap is in place. In developing their Incentive Plans they have already identified a grocery list of options to help them remain below a hard cap. BBEDC participates in all sectors except motherships, and based on our understanding of the pollock industry, these changes would be reasonable. Clearly, saving will occur. Per Kochin et al, even in 2007 it may have been possible to stay under a 68,392 hard cap.

To do that the industry would use the fixed A season closure, and not fish in late September and October, according to their analysis. It's our opinion that the increased closure areas in the 2008 RHS system would have saved additional salmon, and that curtailing the fishery in late September probably wouldn't have been necessary. Adding a hard cap would surely have incentivized the fleet to not fish around the edges of closures, etc., which would make staying under the hard cap fairly easy for the average performer.

More importantly, per Kochin et al, "A hard cap of 47,591 appears to be a reasonable balance between protecting Chinook salmon and allowing the pollock fishery to be harvested." We feel that taking additional measures to get down to that level, while difficult, is a reasonable goal. Mostly, substandard performers are going to have to mend their ways. The fleet will have to make Chinook avoidance a priority. Given the situation in western Alaska, we feel that is warranted.

#### **C. Alternate Impact Analysis of PPA 2 Using Expected Savings and Margins**

While we recognize the limits the analysts must deal with, using gross wholesale value for any foregone harvest as the primary metric greatly overstates the impact of foregone harvest.

In our own work, EBITDA per marginal ton is far more useful for evaluating the impacts to the direct participants. If a measure of impact to indirect participants is needed that should be developed separately. In an obvious example, losses due to reduced fuel sales at the local fuel distributor would not be the gross value of fuel sold, but his margin on the gallons not consumed.

We replicated the projected shutdown date analysis done in the EIS using the same weekly data set of pollock catch and Chinook bycatch by sector, but the one available to the public has considerable holes in the CDQ and mothership sectors due to confidentiality restrictions. It was not possible to come up with a reasonable approximation for the mothership sector, but CDQ data was blended with C/P data then redistributed prorata to pollock as an approximation of the timing of catch and bycatch. For further details, please refer to Appendix C.

In addition, savings were estimated, primarily using estimates from Kochin et al. The savings estimated, had the fixed closure in A season implemented in 2008 been in place in 2009 was calculated as a percentage, 19%, and applied to all A seasons.

Another 10% savings is guesstimated for the changes to the RHS system implemented in 2008 (increased potential closure area by 50%, rolling trigger rate in A season). As other Chinook RHS improvements were made between 2000 and 2006 when Amendment 84 was analyzed, this probably understates the RHS savings prior to 2006, but in those years caps were unlikely to have been reached.

Kochin et al also predicted that excluders would be used under a hard cap of 47,591 only in years of moderate to high abundance without their incentive plan. Savings of 20% are projected in years when the total catch would have exceeded 50% of the sector's cap as a proxy for moderate to high rates. Otherwise, no savings from excluders are projected.

The savings are cumulative, not additive. That is, each behavior modification is applied to the remaining bycatch from the previous step, so that overall the A season savings rate without excluders is projected at 27%, while with it's projected at 42%. Only a 10% savings is projected in B season. Unless the B season pollock harvest is below 86-90%, the only impact is to close October fishing. Obviously under PPA2, the fleet would move its operations earlier in the year to avoid that outcome, so in those cases no foregone B season harvest is expected.

### Conclusions

The only years when PPA2 would likely be constraining on sectors as a whole are when encounters are as high as 2006 and particularly 2007 A seasons. The impacts in B season are likely to be limited to ending October fishing. Impacts in a season like 2007 A season might have been significant, but remember that year 69,261 Chinook were taken in A season. Even with the forecast 42% savings, bycatch would have totaled about 42,000. In our opinion, that level of bycatch is unacceptable, and we have confidence in the industry's ability to figure out how to avoid a shutdown when encounters are that high.

Remember that the EIS concluded that there is not a strong correlation between encounters and abundance, so that allowing high levels of bycatch probably means allowing a much higher intercept rate in years like 2007.

It's worth noting that under PPA1 (using either a 25:75 or a 75:25 history to allocation split), there would have been no foregone harvest assuming just the savings predicted by Kochin et al, with no behavior modifications due to a hard cap.

#### Detailed analysis

Under PPA2, the impacts would fall primarily on the sector with the worst record, inshore.

The offshore sectors have had significantly lower rates on average in A season, and much lower rates in B season. While the better B season rates offshore are partially due to being able to fish far from B season hot spots, they are also due to not fishing as much into October.

We haven't heard a good explanation for the difference in A season rates between sectors other than behavior and ability to stay on the grounds, and those can be improved inshore through increased diligence and information sharing.

On straight history, the rate of bycatch to pollock inshore is 116% in A season and 169% in B season. Under PPA2 (modified as described) there are on average no major impacts to the inshore sector in B season. The bite is in A season, but note that thereafter the blending of 25:75 history : allocation, the inshore sector still has a ratio of cap share to pollock share of 104% while the offshore sectors get 97% in aggregate and have very similar performance.

As a major inshore participant, we call upon the inshore sector to work within the modified PPA2 as proposed and get their act together.

The offshore sectors seem for the most part to have already taken enough action to get their rates down. They're still going to have to work hard in a season like 2007 A, but they will have fewer dials to turn, as the economists say, to modify behavior, as they're already doing significantly better on both A and B season rates.

BBEDC Comments on Salmon Bycatch DEIS

C/P Sector

**Chinook Hard Cap Analysis – Offshore 25% History/ 75% Allocation**  
**Percentage of Pollock Quota Taken Under Hardcap with Projected Savings**

Projected Savings Compared to Historic	A season		B season	
	Savings	Rate Remaining	Savings ate Remaining	
Fixed Closure	19%	81%		
Enhanced VRHS	10%	90%	10%	90%
Total	27%		10%	
If Excluder used	20%	80%	0%	100%
	42%			

**Wtd Average Historic and Allocation**

About 33% of the Seasonal Chinook cap for 35% of the Pollock in A season, 18% of the Seasonal cap B Season  
 Average Bycatch with CDQ

Year	A Season			Rollover		B Season			
	Chinook Bycatch	Savings Factor	PPA2	PPA1	PPA2	PPA1	Chinook Bycatch	PPA2	PPA1
			47,591	68,392	47,591	68,392		47,591	68,392
			Sector Cap	Sector Cap	Rollover	Rollover	Sector Cap	Sector Cap	Rollover
			11,649	16,740	80%	80%	4,279	6,149	
	80.16% of reported C/P						80.16% of reported C/P		
1992	10,125	42%					5,522		
1993	7,109	27%					9,565		
1994	13,746	42%					2,265		
1995	4,786	27%					2,383		
1996	12,245	42%					2,583		
	80.16% of scaled CDQ + scaled C/P by week						80.16% of scaled CDQ + scaled C/P by week		
1997	3,072	27%			7,528	11,601	4,586		
1998	5,210	27%			6,281	10,354	2,042		
1999	2,159	27%			8,060	12,133	2,076		
2000	2,024	27%			8,139	12,212	455		
2001	6,624	27%			5,456	9,529	7,906		
2002	7,600	27%			4,887	8,960	1,111		
2003	11,565	42%			3,923	7,997	3,241		
2004	7,608	27%			4,882	8,955	3,438		
2005	9,155	42%			5,048	9,121	3,481		
2006	13,872	42%			2,847	6,920	1,243		
2007	22,398	42%	85%		-	2,942	5,730	99%	
2008	4,214	27%			6,861	10,935			

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none before Oct.

Under PPA2, the C/P sector on average would have shut down about Mar 10, even with the fixed closure, additional areas closed and excluders, probably leaving about 15% of the A season quota in the water.  
 Under PPA1, a cumulative savings of about 30% would have been needed. The fixed closure and enhanced RHS might have been sufficient.

Under PPA2, the C/P sector would have had to refrain from Oct. fishing but would probably have been unaffected otherwise, assuming the additional closure area would have achieved a 10% savings  
 Under PPA1, the offshore sector should have had no problems, assuming the rollovers occur.

**PPA2**      Estimated losses to the inshore fleet are:

Season	Share left	Offshore DEA	MT Left	EBITDA/mt	Loss
07 A	15%	197,295	30,371	\$ 750	\$ 22,778,375

Only a season like 2007A would have resulted in foregone earnings. Impacts could have been significant but certainly far less than indicated in the RIR, which shows \$167 M in foregone total revenue. The participants with weaker records would have had to significantly improve their performance to avoid higher foregone harvests than indicated for the sector as a whole, but the better performers are already pretty close if the savings forecast can be achieved.

BBEDC Comments on Salmon Bycatch DEIS

CDQ Sector

**Chinook Hard Cap Analysis – CDQ 25% History/75% Allocation**  
 Percentage of Pollock Quota Taken Under Hardcap with Projected Savings

Projected Savings Compared to Historic	A season		B season	
	Savings	Rate Remaining	Savings ate	Remaining
Fixed Closure	19%	81%		
Enhanced VRHS	10%	90%	10%	90%
Total	27%		10%	
If Excluder used	20%	80%	0%	100%
	42%			

**Wtd Average Historic and Allocation - NOTE THAT THIS IS PRORATA SHARE OF CDQ + CP**  
 Inseason Bycatch is Prorata Share of Combined CDQ & Offshore Bycatch  
 About 8.9% of Seasonal Chinook cap for 10% of the pollock A Season and 6.7% of the Seasonal Cap for B season.

Year	A Season			Rollover		B Season			
	Chinook Bycatch	Savings Factor	PPA2 47,591 Sector Cap	PPA1 68,392 Sector Cap	PPA2 47,591 Rollover	PPA1 68,392 Rollover	Chinook Bycatch	PPA2 47,591 Sector Cap	PPA1 68,392 Sector Cap
	19.84% of reported C/P		3,254	4,676	80%	80%	19.84% of reported C/P	1,214	1,744
1992	2,506	42%					1,367		
1993	1,760	27%					2,368		
1994	3,403	42%					561		
1995	1,185	27%					590		
1996	3,031	42%					640		
	19.84% of scaled CDQ + scaled C/P by week						19.84% of scaled CDQ + scaled C/P by week		
1997	760	27%			2,160	3,297	1,135		
1998	1,290	27%			1,851	2,989	506		
1999	535	27%			2,291	3,429	514		
2000	501	27%			2,311	3,449	113		
2001	1,640	27%			1,647	2,785	1,957		
2002	1,881	27%			1,506	2,644	275		
2003	2,863	42%			1,267	2,405	802		
2004	1,884	27%			1,505	2,642	851		
2005	2,266	42%			1,546	2,684	862		
2006	3,434	42%			1,001	2,139	308		
2007	5,545	42%			16	1,154	1,418		
2008	1,043	27%			1,995	3,132			

0 of 12      0 of 12      none before Oct.

Under PPA2, and assuming a 70/30 A/B split, CDQs would have no loss  
 Under PPA1, and the same assumptions, no loss

Under PPA2, assuming a 70/30 A/B split and an 80% rollover, CDQs would have no loss  
 Same under PPA1

The CDQ sector should in aggregate see no foregone harvests under PPA2 as modified or PPA1 unless encounters rates are even higher than 2007. However, as in the future the pollock and Chinook cap are expected to be pooled with the CDQ harvesting partner, and given the data limitations, impacts are likely to be closer to the C/P sector, i.e. there would have been some foregone harvests in season like 2007 A.

Inshore Sector

There could be significant impacts in the inshore sector, particularly for the habitual bad actors if they didn't mend their ways in seasons like 2006 and 2007A, but again the impacts are far less than the RIR indicates. For example, if the fleet takes no actions other than using the existing rolling hot spots, fixed A season closure and excluders in A season, earnings losses could be on the order of \$40-55 M in years like 2006 and 2007 compared to \$202 M in gross revenue impacts in the RIR.

However, we think the industry will react to a hard cap by mending their behavior. The better performing coops do enough better than the average that their losses would be far less than their prorata share of the above figures. And we see no reason why the worst performers shouldn't be able to match the best.

BBEDC Comments on Salmon Bycatch DEIS

**Chinook Hard Cap Analysis – Inshore 75% History/ 25% Allocation**  
**Percentage of Pollock Quota Taken Under Hardcap with Projected Savings**

**Projected Savings Compared to Historic**

	A season		B season	
	Savings	Rate Remaining	Savings	Rate Remaining
Fixed Closure	19%	81%		
Enhanced VRHS	10%	90%	10%	90%
Total	27%		10%	
If Excluder used	20%	80%	0%	100%
	42%			

**Average Allocation and Historic**

About 50% of Seasonal Cap for 45% of the Pollock in A season, 69% B season

Year	Chinook Bycatch	Savings Factor	A Season		Rollover		B Season	
			PPA2	PPA1	PPA2	PPA1	PPA2	PPA1
			47,591	68,392	47,591	68,392	47,591	68,392
			Sector Cap	Sector Cap	Rollover	Rollover	Sector Cap	Sector Cap
			16,590	23,841	80%	80%	9,894	14,219
1992	Inshore 6,725	27%						
1993	3,017	27%						
1994	8,346	27%						
1995	2,040	27%						
1996	15,228	42%						
1997	4,954	27%			10,383	16,184		
1998	4,334	27%			10,745	16,546		
1999	3,103	27%			11,463	17,263		
2000	878	27%			12,760	18,561		
2001	8,555	27%			8,283	14,084		
2002	10,336	27%			7,244	13,045		
2003	16,488	42%			5,580	11,381		
2004	12,376	42%			7,498	13,299		
2005	14,097	42%			6,695	12,496		
2006	36,039	42%	68%		-	2,259	92%	
2007	35,458	42%	49%		-	2,530	89%	97%
2008	8,320	27%			8,420	14,221	86%	90%

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0 of 12

none before Oct.

none before Oct.

Under PPA2, the inshore fleet would have been shut down in 2006 and 2007 despite a 42% reduction in bycatch through improved 2008 RHS with fixed closure and use of excluders.

In 2006, the closure would have come in late February, leaving about 30% of the inshore quota in the water. In 2007 the closure would have come in mid February and have left about half the quota in the water.

Under PPA1 or PPA 2, if the inshore fleet had not fished Oct. there would have been no shutdowns

**PPA2**

Estimated losses to the inshore fleet are:

Season	Share left	Inshore DFA	Mt Left	EBITDA/mt	Loss
06 A	32%	261,148	84,863	\$ 450	\$ 38,188,454
07 A	51%	234,894	120,529	\$ 450	\$ 54,238,097

\* Guesstimate of value to both CV and shoreplant for A season quota \$ 92,426,551

The difference in average rates is fairly striking, with the better coops taking about half the Chinook the worst ones take for the year as a whole. While a big chunk of that is October fishing, there is a lot of room for improvement in A season by the worst performers. The better performers will have some ground to make up but should be a lot closer than it looks for the sector on average.

## BBEDC Comments on Salmon Bycatch DEIS

## Appendices

## A. Correcting sector allocations

Table 3. Chinook Bycatch Rates by Coop or Company							2002-06	Average	Percent of	One of worst
nshore	2007	2006	2005	2004	2003	2002	Average	Annual Mean	??	Times
Unalaska (Alyeska)	0.140	0.107	0.129	0.104	0.055	0.067	0.092	178%		5
Akutan + Arctic	0.160	0.124	0.090	0.037	0.034	0.023	0.062	104%		2
Northern Victor	0.162	0.061	0.052	0.096	0.044	0.019	0.054	106%		2
Unisea	0.098	0.068	0.054	0.047	0.033	0.035	0.047	91%		1
Westward	0.137	0.071	0.061	0.057	0.031	0.024	0.049	90%		0
Peter Pan	0.051	0.093	0.051	0.030	0.020	0.012	0.041	67%		0
Sector Average	0.134	0.091	0.076	0.057	0.036	0.031	0.058			0.046
Covar	0.224	0.315	0.232	0.457	0.167	0.215	0.277			
Potential savings	10,667	14,141	12,849	7,178	2,476	5,250	52,560			73% of savings
Sector total after savings	64,983	41,652	35,130	24,966	18,744	14,674				
% of Sector	14%	25%	27%	22%	12%	26%	22%			
Revised sector history	62.3%	64.5%	68.9%	63.2%	48.7%	55.9%	60.2%			
Mothership										
Excellence	0.046	0.032	0.020	0.040	0.047	0.048	0.038	139%		4
Adj. Golden Alaska*	0.059	0.037	0.018	0.026	0.032	0.022	0.027	100%		1
Ocean Phoenix	0.054	0.033	0.017	0.020	0.019	0.018	0.022	80%		0
Sector Average	0.053	0.034	0.018	0.027	0.030	0.026	0.027			
Covar	0.128	0.076	0.091	0.386	0.458	0.624	0.327			
Potential savings	302	172	(40)	537	655	768	2,395			3% of savings
Sector total after savings	6,171	4,503	2,431	2,930	3,279	2,551				
% of Sector	5%	4%	-2%	15%	17%	23%	10%			
Revised sector history	5.9%	7.0%	4.8%	7.4%	8.5%	9.7%	7.5%			
Offshore CIP										
Trident	0.086	0.029	0.035	0.024	0.043	0.025	0.031	130%		4
Adj. ASC AT/AD*	0.062	0.030	0.040	0.031	0.035	0.016	0.031	126%		3
Arctic Storm/Fjord	0.0719	0.036	0.021	0.026	0.026	0.015	0.025	101%		2
Alaska Ocean	0.053	0.017	0.010	0.019	0.028	0.041	0.023	104%		2
Adj. Aleutian Spray*	0.0716	0.031	0.025	0.018	0.021	0.021	0.023	96%		2
YAK	0.034	0.059	0.010	0.012	0.025	0.008	0.023	86%		1
Adj. Glacier*	0.070	0.031	0.017	0.018	0.023	0.013	0.021	84%		1
Adj. ASC Other*	0.045	0.020	0.024	0.017	0.025	0.012	0.019	80%		0
Sector Average	0.061	0.028	0.025	0.021	0.029	0.018	0.024			
Covar	0.351	0.557	0.305	0.163	0.068	0.366	0.292			
Potential savings	4,617	707	2,707	2,078	2,447	2,328	14,883			21% of savings
Sector total after savings	25,127	14,322	10,267	8,837	12,753	6,735				
% of Sector	16%	5%	21%	19%	16%	26%	17%			
Revised sector history	24.1%	22.2%	20.1%	22.4%	33.1%	25.7%	24.7%			
Adj. CDQ										
3 CDQ Pool AT/AD	0.062	0.030	0.040	0.031	0.035	0.016	0.031	134%		
YDFDA	0.059	0.037	0.018	0.026	0.032	0.022	0.027	118%		
APICDA	0.072	0.031	0.025	0.018	0.021	0.021	0.023	101%		
3 CDQ Pool ASC Other	0.045	0.020	0.024	0.017	0.025	0.012	0.019	85%		
NSEDC	0.070	0.031	0.017	0.018	0.023	0.013	0.021	90%		
Sector Average	0.059	0.028	0.024	0.020	0.026	0.015	0.023			
Covar	0.178	0.227	0.395	0.307	0.229	0.266	0.203			
Potential savings	559	226	494	276	202	155	1,912			3% of savings
Sector total after savings	7,991	4,108	3,147	2,773	3,708	2,297				
% of Sector	7%	5%	16%	10%	5%	7%	9%			
Revised sector history	7.7%	6.4%	6.2%	7.0%	9.6%	8.7%	7.6%			
Overall All sectors	0.092	0.057	0.047	0.037	0.032	0.024	0.039			
Total Savings	16,145	15,245	16,010	10,069	5,779	8,501	71,750			18% of historic
All Sectors after Savings	104,272	64,566	50,975	39,505	38,485	26,257				

\* Adjustment is to blend CDQ and partner bycatch to determine overall rate and allocate Chinook prorate to pollock



BBEDC Comments on Salmon Bycatch DEIS

**SAVINGS BY SECTOR IF WORST PERFORMERS ACHIEVE SAME CHINOOK BYCATCH RATES AS THEIR PEERS**

AFA SECTOR COOP OR CO.	2007 Harvest	2007 Chinook	2007 Chinook Rate	2007 % of Average	2006 Harvest	2006 Chinook	2006 Chinook Rate	2006 % of Average	2005 Harvest	2005 Chinook	2005 Chinook Rate	2005 % of Average
<b>CDQ</b>												
<b>Adjusted CDQ History</b>												
3 CDQ POOL AT/AD	18,050	1,113	0.062		27,577	840	0.030		18,836	758	0.040	
3 CDQ POOL Other	51,612	2,348	0.045	0.050	47,611	934	0.020	0.024	56,024	1,323	0.024	0.028
APICDA	19,505	1,398	0.072		21,053	852	0.031		20,961	517	0.025	
NSEDC	30,651	2,146	0.070		33,083	1,032	0.031		32,838	567	0.017	
YDFDA	19,505	1,156	0.059		21,053	785	0.037		20,961	370	0.018	
	139,324	8,157	0.059		150,376	4,243	0.028		149,720	3,535	0.024	
Savings Prorata with Pthr.												
3 CDQ POOL AT/AD	50%	-	-	-	-	-	-	-	-	388	-	-
APICDA	14%	393	-	-	-	-	-	-	-	105	-	-
NSEDC	22%	-	-	-	-	135	-	-	-	-	-	-
YD	14%	168	-	-	-	91	-	-	-	-	-	-
Revised Total	100%	7,991	-	-	-	4,108	-	-	-	3,147	-	-
<b>INSHORE</b> (with unobserved salmon distributed prorata to <125' deliveries)												
Akutan + Arctic	185,160	29,678	0.160	122%	204,527	25,324	0.124	143%	208,778	18,770	0.090	121%
Peter Pan	22,739	1,160	0.051	39%	15,628	1,453	0.093	107%	17,120	881	0.051	69%
Northern Victor	48,312	7,976	0.162	124%	53,238	3,253	0.061	70%	54,610	2,822	0.052	70%
Unalaska (Alveska)	69,923	9,815	0.140	107%	80,463	8,575	0.107	123%	79,820	10,258	0.129	173%
Unisea	148,594	14,524	0.098	75%	166,752	11,392	0.068	79%	158,635	8,615	0.054	73%
Westward	102,426	14,056	0.137	105%	121,992	8,695	0.071	82%	127,341	7,734	0.061	82%
Total inshore	578,154	77,209	0.134	146%	642,601	58,693	0.091	161%	648,304	49,083	0.076	162%
If worst two inshore coops each year achieve average of other five, what % reduction is achieved overall?												
Average rate of others	343,682	39,556	0.115		357,610	24,794	0.069		357,706	20,054	0.056	
Worst Rate for Year	48,312	7,976	0.162	120%	204,527	25,324	0.124	143%	208,778	18,770	0.090	121%
Second Worst Rate	185,160	29,678	0.160	119%	80,463	8,575	0.107	123%	208,778	18,770	0.090	121%
Worst two if rate = others	234,472	37,653	0.161	123%	284,990	33,899	0.119	137%	288,598	29,029	0.101	135%
Savings	41%	10,667	14%		44%	14,141	25%		45%	12,849	27%	
<b>MOTHERSHIPS</b>												
Act. Golden Alaska	35,583	2,109	0.059	111%	39,781	1,483	0.037	109%	41,882	740	0.018	96%
Excelsior	34,611	1,583	0.045	86%	37,702	1,217	0.032	94%	37,766	769	0.020	111%
Ocean Phoenix	51,319	2,781	0.054	102%	53,920	1,803	0.033	98%	51,017	883	0.017	95%
MS Total	121,513	6,473	0.053	121%	131,404	4,503	0.034	144%	130,665	2,392	0.018	117%
Average rate of others	85,930	4,364	0.051		91,622	3,020	0.033		88,783	1,652	0.019	
Worst Rate for Year	35,583	2,109	0.064		39,781	1,483	0.049		41,882	740	0.018	
Worst if = others		1,807	-	-		1,311	-	-		779	-	-
Savings	29%	302	5%		30%	172	4%		32%	(40)	-2%	
<b>OFFSHORE CIPs</b>												
Act. Aleutian Sovv	24,627	1,763	0.0716	118%	26,633	825	0.0310	109%	26,371	650	0.025	99%
Act. ASC Tsimoh/Dynasty	54,920	3,388	0.062	101%	84,721	2,581	0.030	107%	57,573	2,317	0.040	162%
Act. ASC Other	157,036	7,137	0.045	75%	146,268	2,869	0.020	69%	171,243	4,044	0.024	95%
Act. Glacier	42,251	2,958	0.070	115%	44,310	1,382	0.0312	110%	43,214	744	0.017	69%
Alaska Ocean	36,632	1,956	0.053	80%	39,524	677	0.017	60%	38,252	401	0.010	41%
Arctic Storm/Flord	62,566	4,496	0.0719	118%	67,351	2,404	0.036	125%	66,970	1,400	0.021	84%
Trident	83,336	7,129	0.086	141%	90,095	2,575	0.029	100%	89,240	3,139	0.036	142%
YAK	27,171	919	0.034	56%	25,299	1,715	0.069	206%	29,133	278	0.010	36%
PCC TOTAL	488,539	29,744	0.061		528,199	15,028	0.028		522,966	12,974	0.025	
Average rate of others	318,010	16,356	0.051		415,066	11,294	0.027		349,812	6,867	0.020	
Worst Rate for Year	170,529	13,388	0.079	129%	113,133	3,774	0.033	117%	173,184	6,107	0.035	142%
Worst if = others		8,771	-	-		3,068	-	-		3,400	-	-
Savings	35%	4,617	16%		21%	707	5%		33%	2,707	21%	
<b>Grand Totals</b>												
From Analysis (should include CDQ)	1,327,531	121,583	0.092	100%	1,452,579	82,468	0.057	100%	1,448,685	67,984	0.047	100%
Shortfall(overage)		121				690				(138)		

BBEDC Comments on Salmon Bycatch DEIS

SAVINGS BY SECTOR IF WORSE

AFA SECTOR	2004 Harvest	2004 Chinook	2004 Chinook Rate	2004 % of Average	2003 Harvest	2003 Chinook	2003 Chinook Rate	2003 % of Average	2002 Harvest	2002 Chinook	2002 Chinook Rate	2002 % of Average	AVERAGE
<b>CDQ</b>													
<b>Adjusted CDQ History</b>													
3 CDQ POOL AT/AD	19,141	601	0.031		19,354	675	0.035		19,310	307	0.016	0.023	
3 CDQ POOL Other	55,443	939	0.017	0.021	55,206	1,368	0.025	0.027	54,904	665	0.012	0.013	
APICDA	20,884	372	0.018		20,877	437	0.021		20,780	427	0.021	0.023	
NSEDC	32,817	603	0.018		32,807	769	0.023		32,654	417	0.013	0.021	
YDFDA	20,884	534	0.026		20,877	672	0.032		20,780	461	0.022	0.027	
	149,169	3,048	0.020		149,121	3,910	0.026		148,427	2,297	0.015		
Savings Prorata with Pint													
3 CDQ POOL AT/AD		276				202				-			
APICDA		-				-				155			
NSEDC		-				-				-			
YD		-				-				-			
Revised Total		2,773				3,708				2,297			
<b>INSHORE</b>													
(with unobserved salmo)													
Akutan + Arctic	205,817	7,713	0.037	74%	210,710	7,203	0.034	106%	208,435	4,874	0.023	76%	104%
Peter Pan	13,822	413	0.030	59%	18,851	374	0.020	81%	13,651	168	0.012	40%	67%
Northern Victor	54,129	5,218	0.096	191%	54,950	2,437	0.044	137%	54,347	1,521	0.019	61%	100%
Unalaska (Alaska)	75,478	7,845	0.104	206%	79,720	4,392	0.055	170%	78,851	5,287	0.067	217%	178%
Unisea	150,143	7,014	0.047	92%	150,417	4,916	0.033	101%	148,891	5,141	0.035	112%	91%
Westward	137,018	7,874	0.057	114%	141,764	4,388	0.031	95%	140,015	3,405	0.024	79%	90%
Total Inshore	636,407	36,077	0.057	152%	656,502	23,689	0.036	113%	644,190	19,896	0.031	128%	
If worst two inshore coops e													
Average rate of others	506,801	23,014	0.045		521,792	16,860	0.032		416,448	9,468	0.023		
Worst Rate for Year	75,478	7,845	0.104	206%	79,720	4,392	0.055	170%	78,851	5,287	0.067	217%	
Second Worst Rate	54,129	5,218	0.096	191%	54,950	2,437	0.044	137%	148,891	5,141	0.035	112%	
Worst two if rate = others	129,607	13,063	0.101	200%	134,710	6,629	0.051	157%	227,742	10,428	0.046	148%	
Savings	20%	7,176	22%		21%	2,476	12%		35%	5,250	26%		26%
<b>MOTHERSHIPS</b>													
Adj. Golden Alaska	43,321	1,108	0.026	85%	44,667	1,439	0.032	107%	45,152	1,001	0.022	86%	99%
Excellence	30,336	1,225	0.040	151%	29,878	1,405	0.047	156%	27,684	1,315	0.048	185%	139%
Ocean Phoenix	55,556	1,134	0.020	79%	56,030	1,090	0.019	65%	56,306	1,003	0.018	69%	80%
MS Total	129,222	3,467	0.027	151%	130,565	3,934	0.030	156%	129,142	3,319	0.026	185%	
Average rate of others	98,886	2,242	0.023		100,887	2,529	0.025		101,458	2,004	0.020		
Worst Rate for Year	30,336	1,225	0.040		29,878	1,405	0.047		27,684	1,315	0.048		
Worst if = others		688				750				547			
Savings	23%	537	15%		23%	655	17%		21%	768	23%		26%
<b>OFFSHORE CIPs</b>													
Adj. Aleutian Spray	26,160	465	0.018	85%	26,260	549	0.021	72%	26,493	544	0.021	117%	96%
Adj. ASC Triumph/Dynasty	58,345	1,832	0.031	149%	59,314	2,068	0.036	120%	58,814	936	0.016	90%	120%
Adj. ASC Other	168,997	2,861	0.017	81%	169,189	4,162	0.025	85%	167,226	2,687	0.012	71%	80%
Adj. Glacier	42,003	772	0.018	87%	43,502	1,019	0.023	81%	44,439	829	0.013	73%	84%
Alaska Ocean	38,829	741	0.019	91%	39,108	1,034	0.026	96%	38,863	1,590	0.041	234%	104%
Arctic Storm/Ford	66,507	1,733	0.026	124%	66,940	1,726	0.026	89%	65,972	960	0.015	83%	101%
Trident	88,691	2,144	0.024	115%	89,120	3,063	0.043	149%	87,872	2,194	0.025	142%	130%
YAK	30,084	366	0.012	58%	28,996	719	0.025	85%	28,717	223	0.008	44%	66%
PCC TOTAL	519,586	10,915	0.021		522,429	15,200	0.029		515,196	9,063	0.018		
Average rate of others	306,073	5,205	0.017		334,887	8,175	0.024		362,168	4,735	0.013		
Worst Rate for Year	213,513	5,709	0.027	127%	187,542	7,025	0.037	129%	153,028	4,328	0.028	161%	
Worst if = others		3,631				4,578				2,001			
Savings	41%	2,076	19%		36%	2,447	16%		30%	2,328	26%		32%
<b>Grand Totals</b>													
From Analysis (should include CDQ)	1,434,385	53,507	0.037	100%	1,458,617	46,733	0.032	100%	1,436,955	34,575	0.024	100%	
Shortfall (overage)		54,026				46,992				34,494			
		519				259				(81)			

B. Additional Comments on PPA1

Because the ICA and Incentive Plans are still under development and may continue to be so until fall of 2010, the ICA is difficult at best to evaluate. Over the past seven months we have been presented with many different versions of Incentive Plans and other Plans that have come and gone in the same time period. The two current versions being circulated change every week or two when presented to the public.

That the proposals continue to change as much as they do provides no comfort to the public that the Incentive Plans proposed today will have any resemblance to what we see when they are submitted to NMFS. Under these circumstances it is difficult to evaluate the efficacy of the current proposals let alone the proposals the Council will see at either final action or implementation.

For more than seven months the industry has worked on their proposals. Dozens of representatives have spent countless hours and only got as far as what was presented at the February Council meeting. Both plans fail to meet the requirements and the intent of PPA1, nor is there any indication that they will meet those requirements by the time of final action or at implementation when an ICA would need to be submitted for approval. And once

again, there is nothing to ensure that any ICA submitted to NMFS for approval would bear any resemblance to what the Council sees at final action in April. Therefore PPA1 should be rejected and PPA2 should be adopted. Nothing precludes the industry from doing any of the elements of any of the Incentive Plans that have been proposed outside the Council process - in fact, it may be in their best interest to do so.

There is no discussion in either of the industry initiated Incentive Plans of their plan for monitoring and enforcing their program. We find this to be a serious flaw in both Plans. The Plans put forward are complicated, outside the public process and ripe for gaming by the industry - it's a case of the fox watching the chicken coop. Should PPA1 be recommended to the Secretary, strong provisions for monitoring and enforcement of the rules imposed by the ICA should be required.

Any ICA that moves forward should be required to have a third-party conduct an annual analysis of the effectiveness of the ICA as it relates to the current problem statement and ICA criteria identified at final action. That analysis should be presented to the Council in an annual report for public review. The Council should also require scheduled review by the Agency of the proposed action after one, three and five years of the program to consider whether the program continues to meet Council intent and to consider new developments in the understanding of salmon biology and pollock fishing patterns. Should the program fail to prove more effective than a hard cap alone, the program would sunset.

To evaluate the efficacy of an ICA the following criteria should be required:

- Test fishing (up to 5% of the TAC) inside closed areas for the purpose of evaluating performance of the ICA against any Incentive Plan.
- Thorough explanation of the mechanisms for monitoring and enforcement of the ICA including any fee structure and the ultimate outcome for where those fees would be spent.

#### *Financial Incentive Plan/Undercatch Plan*

While the sponsors of Financial Incentive Plan proposal argue that incentives at the company level may produce a more equitable competition for the cash at stake, the PPA requires the ICA to provide incentives at the vessel level. Modifying the program to move the incentive back to the vessel level in order to meet the requirements of the ICA re-introduces the anticipated gaming (the Sacrificial Lamb concept) by companies with multiple vessels and/or large market shares of pollock. Therefore the Undercatch/Financial Incentive Plan is broken and should not be considered as a qualifying plan.

#### *Legacy Plan*

The Legacy Plan presented by industry is probably better at meeting the intent of the Council motion but because the proponents of the plan are still making major modifications it is difficult to evaluate whether the plan looks like it will actually work. From what the public has seen thus far the Legacy Plan does not seem to do enough.

Because of the rules to modify the effects of the Legacy Program the industry has included in their proposal, it may be years before a vessel sees a significant effect to their bycatch allocation, and those effects may not be strong enough to change fleet behavior. Because there have only been a handful of years that the fleet would have hit a hard cap of 68,392

Chinook, the mere trading of credits as future insurance will not be a strong enough incentive for those vessels who historically have disregarded their salmon bycatch rates. Proponents of the Legacy Plan have often compared it to buying insurance. As with car insurance, it may be an effective tool for clean players who keep their policy current, but it is not likely to be a deterrent for the reckless few under-insured vessels and companies who blatantly disregard the others on the road.

The Legacy Plan also fails to adequately address the potential gaming (the Sacrificial Lamb) of larger companies with multiple vessels or large market shares. They fail to address the chronically bad players (Dirty Harry concept). And by encouraging all vessels to settle at a mean bycatch rate (the Penguin Factor), they fail to address the issue of avoiding salmon at all levels of abundance when that mean is not low enough because they received a higher overall cap.

Note that the bounds on how much a vessel can gain or lose are critical to the Legacy Plan. At the proposed bounds of plus or minus 33%, the worst vessel would drop no lower than their share of a 45,000 cap. Most vessels would be significantly higher with the highest getting the equivalent of their share of a 91,000 cap. How that would work better than a cap of 47,600 is hard to comprehend. Shifting to bounds of plus or minus 50% with a faster up and down weighting would help, but it's hard to see how the Legacy Plan would achieve the intent of PPA1 without the mean being considerably lower. Therefore, the Legacy Plan also fails to meet the intent of the Council motion and should be rejected.

#### *Technical Issues*

The Council has identified several points where it seeks input in the Council motion. Those are addressed here.

The DEIS identifies potential problems with PPA1 in the event that some entities opt out of the ICA and fish under the lower hard cap. Without additional clarification at final action, the 68,392 hard cap could be exceeded. We recommend that Option B identified in the DEIS as the best resolution to this potential problem and we believe it to meet the intent of the Council motion.

Lacking reliable electronic monitoring systems that meet a comfort level for NMFS Enforcement, all vessels should have no less than 100% observer coverage while pollock fishing – regardless of whether or not they participate in an ICA. If other regulations require additional observer coverage, those regulations shall prevail. Enumeration of every salmon is imperative for a program that relies upon individual vessel accountability.

NMFS has expressed concern over how to handle a situation where more than one ICA was submitted. We believe that only one ICA should be approved, and that this will ensure that industry works together to find real solutions rather than just easy solutions that fit any one user group.

Should more than one ICA be submitted for a calendar year, NMFS should reject all ICAs and give the industry 30 days to work together to submit one comprehensive ICA that represents at some minimum percentage (90%?) of the pollock harvest. If the industry cannot reach a resolution, then the ICA will be rejected for the year and the lower cap will be allocated as outlined at final action.

*C. Pollock and salmon catch data by week*Analytical methodology

NMFS provided weekly pollock catch and Chinook bycatch data for the CDQ, C/P and inshore sector from 2000 to 2007. The data for motherships was not useable, and that for CDQs was limited for many weeks in some seasons by confidentiality restrictions.

In order to improve on the available weekly data, the Chinook bycatch numbers for non-MS sectors were scaled up to the totals posted by NMFS for that season by sector and spread prorata over the season proportionally to reported Chinook bycatch. The largest discrepancies were for the CDQ sector during B season in 2000, 2001, 2006 and 2007. Available weekly Chinook bycatch numbers for those two seasons were multiplied by 6.2, 9.6, 4.8 and 11.7 respectively to scale them up to the actuals. Clearly this data was too spotty to use as is, so the simplifying assumption was made that 86% CDQ bycatch came from the 86% landed by the C/P fleet.

Then 86% of the scaled up CDQ weekly catch and bycatch data was added to the C/P weekly catch and bycatch data to smooth it out. Those weekly totals were then scaled up to the C/P+CDQ seasonal totals from the EIS. The highest scaling factors for combined weekly data were 06B season at 1.44 and 00B at 1.26. The rest were 1.1 or below. While not ideal, that was the best data available, and other than perhaps 06B was judged adequate for the purpose of projecting season shutdown rates. Note further that a large percentage of B season bycatch comes late in the year, so the projected season shutdown dates for the weakest data are not likely to be off by much.

The CP+CDQ total pollock and total Chinook by week was then redistributed prorata to the pollock share, 80.16% to C/Ps and 19.84% to CDQs. That weekly data was used to project the week shutdown would occur and the percentage of pollock taken by that date, the same procedure used in the EIS (though of course they had all the confidential data).

The weekly inshore sector data was also scaled up to the Chinook numbers by season. The largest scaling factor needed was 01B at 1.16, the next largest was 00B at 1.15, and the remainder were 1.1 or less, so this data looks good. Again, the largest corrections were in B season when the number of vessels dropped below 3, and the bigger corrections were in low encounter years when a shutdown would not have occurred.

Once the weekly catch and bycatch data was made useable, caps were calculated by sector and compared to the weekly cumulative catch data reduced by the applicable savings factor using lookup tables. When a cap was tripped, the lookup table returns the percentage of pollock harvested as of that point in the season.

Foregone harvest was valued using estimated EBITDA/mt amounts for marginal quota by sector.

Please contact BBEDC if you'd like a copy of the data file with the described modifications.