

FINAL COUNCIL MOTION
GOA Chinook Salmon Bycatch
February 5, 2011

The Council adopts the below purpose and need statement and revised alternatives for initial review in April, anticipating the selection of a preliminary preferred alternative in April.

Problem statement:

Magnuson-Stevens Act National Standards require balancing optimum yield with minimizing bycatch and minimizing adverse impacts to fishery dependent communities. Chinook salmon bycatch taken incidentally in GOA pollock fisheries is a concern, historically accounting for the greatest proportion of Chinook salmon taken in GOA groundfish fisheries. Salmon bycatch control measures have not yet been implemented in the GOA, and 2010 Chinook salmon bycatch levels in the area were unacceptably high. Limited information on the origin of Chinook salmon in the GOA indicates that stocks of Asian, Alaska, British Columbia, and lower-48 origin are present, including ESA-listed stocks.

The Council is considering several management tools for the GOA pollock fishery, including a hard cap and cooperative approaches with improved monitoring and sampling opportunities to achieve Chinook salmon prohibited species catch (PSC) reductions. Management measures are necessary to provide immediate incentive for the GOA pollock fleet to be responsive to the Council's objective to reduce Chinook salmon PSC.

Alternatives:

Alternative 1: Status quo.

Alternative 2: Chinook salmon PSC limit and increased monitoring.

Component 1: PSC limit: 15,000, 22,500, or 30,000 Chinook salmon PSC limit.

The PSC limit may be exceeded by up to 25 percent one out of three consecutive years. If the PSC limit is exceeded in one year, it may not be exceeded for the next two consecutive years.

Apportion limit between Central and Western GOA

- a) proportional to the historical pollock TAC (2006-2010 or 2001-2010 average).
- b) proportional to historical average bycatch number of Chinook salmon (2006-2010 or 2001-2010 average).

Option: drop 2007 and 2010 from both regulatory time series.

- c) as a combination of options (a) and (b) at a ratio of a:b equal to
 - Suboption i: 25:75
 - Suboption ii: 50:50
 - Suboption iii: 75:25

Central and Western GOA PSC limits and the 25 percent buffer would be managed by area (measures to prevent or respond to an overage would be applied at the area level, not Gulf-wide).

Chinook salmon PSC limits shall be managed by NMFS in-season similar to halibut PSC limits.

If a Chinook salmon PSC limit is implemented midyear in the year of implementation, an amount should be deducted from the annual PSC limit in that year. The deduction should be equal to the contribution that would have been made based on historical averages (selected above) in the seasons preceding implementation.

Component 2: Expanded observer coverage:

Extend existing 30% observer coverage requirements for vessels 60'-125' to trawl vessels less than 60' directed fishing for pollock in the Central or Western GOA.

Alternative 3: Mandatory salmon bycatch control cooperative membership.

To be eligible to participate in the Central Gulf of Alaska or Western Gulf of Alaska pollock fishery, the holder of an appropriately endorsed License Limitation Program license would be required to join a Chinook salmon bycatch control cooperative.

Each cooperative would be formed for participation in a single regulatory area (e.g., Central Gulf of Alaska or Western Gulf of Alaska).

To form, a cooperative is required to have more than:

- a) 25 percent; or
- b) 33 percent;

of the licenses that participated in the applicable regulatory area in the preceding year.

Any cooperative is required to accept as a member any eligible person, subject to the same terms and conditions that apply to all other cooperative members. In addition, the cooperative agreement shall not disadvantage any eligible person entering the fishery for not having an established Chinook salmon bycatch history in the fishery.

Each cooperative agreement shall contain:

A requirement that all vessels retain all salmon bycatch until the plant observers have an opportunity to determine the number of salmon and collect scientific data and biological samples.

Vessel reporting requirements to be used to identify salmon hotspots and an appropriate set of measures to limit fishing in identified hotspots.

A system of information sharing intended to provide vessels with timely information concerning Chinook salmon bycatch rates.

A monitoring program to:

- ensure compliance with the full retention requirement,
- catalogue gear use and fishing practices and their effects on Chinook bycatch rates,
- ensure compliance with vessel reporting requirements and limits on fishing under the system of salmon hotspots,
- determine compliance with any measures that require use of fishing gear or practices to avoid Chinook salmon PSC, and

verify vessel performance and implement any system of rewards and penalties related to vessel performance.

A set of contractual penalties for failure to comply with any cooperative requirements.

Cooperative agreements may also contain the following measures:

Measures to promote gear innovations and the use of gear and fishing practices that contribute to Chinook salmon avoidance.

A system of vessel performance standards that creates individual incentives for Chinook salmon avoidance, which could include rewards or penalties based on Chinook salmon bycatch.

Cooperatives may have no measures except those specifically authorized by this action (and shall not include any measures that directly allocate access to any portion of the total allowable catch or any PSC limit).

Each cooperative shall annually provide a report to the Council that includes the cooperative agreement and describes the cooperative's compliance with the specific requirements for cooperatives and the cooperative's performance with respect to those requirements (including salmon retention, gear innovations and fishing practices, vessel reporting requirements and hotspot identification and fishing limitations, vessel performance standards, information sharing, and monitoring). Cooperative reports shall also document any rewards or penalties related to vessel performance and any penalties for failure to comply with the cooperative agreement. The cooperative report should also describe the Chinook salmon bycatch seasonally, identifying any notable Chinook salmon bycatch occurrences or circumstances in the fishery. As a part of its report, a cooperative shall describe each measure adopted by the cooperative, the rationale for the measure (specifically describing how a measure is intended to serve the objective of addressing Chinook salmon PSC, while ensuring a fair opportunity to all participants in the fishery), and the effects of the measure.

In the event more than one cooperative is created within a regulatory area, those cooperatives will be required to enter an intercooperative agreement prior to beginning fishing. The intercooperative agreement will establish rules to ensure that no cooperative (or its members) are disadvantaged in the fishery by its efforts to avoid Chinook salmon.

The parties to any intercooperative agreement shall annually provide a report to the Council including the intercooperative agreement and describing each measure in the agreement, the rationale for the measure (specifically describing how a measure is intended to serve the objective of addressing Chinook salmon PSC, while ensuring a fair opportunity to all participants in the fishery), and the effect of the measure.

The requirement for salmon PSC to be discarded at sea would not apply to directed GOA pollock fishing.

The Council intends to advance both a PSC limit and mandatory bycatch cooperatives as a preliminary preferred alternative and requests the agency begin scheduling to accommodate both alternatives as quickly as practicable.

Executive Summary

This amendment package proposes management measures that would apply exclusively to the directed pollock fishery in the Western and Central Gulf of Alaska (GOA). The measures under consideration include setting prohibited species catch (PSC) limits in the Central and Western GOA for Chinook salmon (*Oncorhynchus tshawytscha*), which would close the directed pollock fishery in those regulatory areas once attained, and requiring membership in a mandatory salmon bycatch control cooperative in order to participate in the pollock fisheries. At the time that the North Pacific Fishery Management Council (Council) initiated this analysis, they identified that this amendment package should be moved forward on an expedited timeframe as the highest priority of Council actions currently under consideration. The Council has tentatively signaled that it will advance both a PSC limit and mandatory bycatch cooperatives as a preliminary preferred alternative at initial review, in April 2011. The Council plans to take final action on this issue in June 2011, which could allow implementation of the proposed action in mid-2012.

Council Problem Statement

Magnuson-Stevens Act National Standards require balancing optimum yield with minimizing bycatch and minimizing adverse impacts to fishery dependent communities. Chinook salmon bycatch taken incidentally in GOA pollock fisheries is a concern, historically accounting for the greatest proportion of Chinook salmon taken in GOA groundfish fisheries. Salmon bycatch control measures have not yet been implemented in the GOA, and 2010 Chinook salmon bycatch levels in the area were unacceptably high. Limited information on the origin of Chinook salmon in the GOA indicates that stocks of Asian, Alaska, British Columbia, and lower-48 origin are present, including Endangered Species Act-listed stocks.

The Council is considering several management tools for the GOA pollock fishery, including a hard cap and cooperative approaches with improved monitoring and sampling opportunities to achieve Chinook salmon PSC reductions. Management measures are necessary to provide immediate incentive for the GOA pollock fleet to be responsive to the Council's objective to reduce Chinook salmon PSC.

Alternatives

The Council adopted the following alternatives for analysis. Both Alternatives 2 and 3 may be selected together.

- Alternative 1: Status quo
- Alternative 2: Establish a Chinook salmon PSC limit for the directed pollock fishery (hard cap, by regulatory area) and increase observer coverage on vessels under 60 foot
- Alternative 3: Require membership in a mandatory salmon bycatch control cooperative in order to fish in the directed pollock fishery

Under Alternative 2, the range of PSC limits to be analyzed for the directed pollock fishery includes 15,000, 22,500, or 30,000 fish, applied to the Western/Central GOA fisheries as a whole. These limits would be apportioned among regulatory areas based on the relative historic pollock catch in each regulatory area, the relative historic bycatch amounts in each area, or a weighted ratio of catch and bycatch (see Table ES- 1). In order to reduce the uncertainty associated with bycatch estimates, expanded observer coverage could be required for under 60 foot vessels as an interim measure, until the observer program restructuring amendment is implemented.

Table ES- 1 Options ranked by the Chinook allowance to each area, percentage of total allowance, and the total number of Chinook salmon allowed GOA-wide (15,000, 22,500, or 20,000 fish)

Alternatives	Years	Central Gulf (620 & 630)					Western Gulf (610)				
		Rank	%	15,000	22,500	30,000	Rank	%	15,000	22,500	30,000
Option b	2001-2006, 2008-2009	1	77%	11,612	17,418	23,224	18	23%	3,388	5,082	6,776
Option b	2006 & 2008 & 2009	2	75%	11,246	16,870	22,493	17	25%	3,754	5,630	7,507
Option c(i)	2001-2006, 2008-2009	3	74%	11,078	16,617	22,156	16	26%	3,922	5,883	7,844
Option c(i)	2006 & 2008 & 2009	4	72%	10,785	16,177	21,570	15	28%	4,215	6,323	8,430
Option c(ii)	2001-2006, 2008-2009	5	70%	10,544	15,816	21,089	14	30%	4,456	6,684	8,911
Option c(ii)	2006 & 2008 & 2009	6	69%	10,324	15,485	20,647	13	31%	4,676	7,015	9,353
Option b	2001-2010	7	67%	10,068	15,102	20,136	12	33%	4,932	7,398	9,864
Option c(iii)	2001-2006, 2008-2009	8	67%	10,010	15,016	20,021	11	33%	4,990	7,484	9,979
Option c(i)	2001-2010	9	66%	9,920	14,880	19,840	10	34%	5,080	7,620	10,160
Option c(iii)	2006 & 2008 & 2009	10	66%	9,862	14,793	19,724	9	34%	5,138	7,707	10,276
Option c(ii)	2001-2010	11	65%	9,772	14,658	19,544	8	35%	5,228	7,842	10,456
Option c(iii)	2001-2010	12	64%	9,624	14,437	19,249	7	36%	5,376	8,063	10,751
Option a	2001-2010	13	63%	9,477	14,215	18,953	6	37%	5,523	8,285	11,047
Option a	2006-2010	14	63%	9,401	14,101	18,802	5	37%	5,599	8,399	11,198
Option c(iii)	2006-2010	15	62%	9,331	13,997	18,662	4	38%	5,669	8,503	11,338
Option c(ii)	2006-2010	16	62%	9,261	13,892	18,522	3	38%	5,739	8,608	11,478
Option c(i)	2006-2010	17	61%	9,191	13,787	18,383	2	39%	5,809	8,713	11,617
Option b	2006-2010	18	61%	9,122	13,682	18,243	1	39%	5,878	8,818	11,757

Source: NOAA Catch Accounting Data

The Council specified a number of conditions for the mandatory bycatch cooperative. Alternative 3 would establish a program under which qualified license holders would be required to join a limited-purpose cooperative to participate in the Central and Western GOA pollock fisheries. Actions that may be undertaken by the cooperatives would be restricted to specific measures with the exclusive purpose of limiting Chinook salmon bycatch. Cooperative formation rules would allow two or three cooperatives to be created in each regulatory area, but would require an intercooperative agreement to ensure each cooperative could adopt Chinook salmon bycatch control measures without jeopardizing its members' opportunities in the fishery. Each cooperative would be required to annually report the effects of its Chinook salmon bycatch control measures to the Council. Contractual requirements aimed at limiting Chinook salmon bycatch must include full retention of salmon, and monitoring, reporting, and information sharing mechanisms among cooperative members to allow for salmon hotspot reporting and individual vessel bycatch performance, and may include other measures such as gear innovations, fishing practices, and vessel performance standards to promote salmon avoidance.

NMFS has raised concerns with the administration of the mandatory cooperative alternative. Specifically, the administration of cooperatives (including approval of annual cooperative contracts and any penalties for violation of the cooperative agreement) must be implemented in a manner that maintains NMFS' management authority over the fishery. Whether cooperatives would be able to serve their intended purpose, while maintaining a level of oversight that maintains that authority, is uncertain. For example, the imposition of certain cooperative penalties would require notice, and an opportunity for a hearing, consistent with applicable Magnuson-Stevens Act and Administrative Procedures Act requirements. These administrative reviews typically take several weeks (or even months). A reasonable cooperative penalty might be to require a vessel to temporarily suspend fishing due for failure to abide by a hotspot limitation or some other agreed constraint on fishing effort. Measures of this type are likely subject to notice and hearing requirements. Pending completion of such a hearing, penalties are typically suspended. Such a hearing requirement could make any standdown ineffective. **An additional concern arises from a mandatory reporting of catch data within**

¹ In a voluntary cooperative structure (where a vessel has a reasonable fishing opportunity outside of a cooperative) management authority would be maintained, as membership is not a prerequisite to participating in the fishery.

cooperatives. Any such reporting requirement would need to comport with data confidentiality constraints. Whether confidentiality requirements could be satisfied requires additional consideration.

Regulatory Impact Review

Status Quo – Alternative 1

Vessels participating in the central Gulf pollock fishery averaged 36,051 mt of pollock catch from 2003-2010. Pollock catch in the central Gulf was greatest in 2005, when 46,802 mt were caught. Pollock catch was least in 2009 when 22,700 mt were taken. Those vessels were estimated to catch as few as 2,123 Chinook (2009) and as many as 31,647 Chinook (2007) from 2003-2010. Over those years the fleet was estimated to average catching 12,607 Chinook per year. When the Chinook catch is compared to the pollock catch, the number Chinook per metric ton ranged from 0.09 Chinook/mt in 2009 to 0.98 Chinook/mt of 2007. On average, 0.35 Chinook/mt of pollock was caught from 2003-2010.

In the western Gulf, the pollock fleet caught between 14,010 mt (2009) and 30,756 mt (2005) of pollock, while averaging 20,773 mt of pollock catch from 2003-2010. Over that same period of time the fleet was estimated to catch from 441 Chinook (2009) to 31,581 Chinook (2010). The fleet was estimated to catch an average of 6,380 Chinook per year from 2003-2010. Comparing Chinook catch to the pollock catch indicates that 0.03 Chinook/mt were taken in 2009. That ratio increased to 1.23 Chinook/mt in 2010. So, from 2003 through 2010 the smallest ratio and largest ratio of Chinook catch to pollock catch, occurred in consecutive years.

Selecting the status quo alternative will not impact the costs or revenues that would be expected to accrue to the harvesters, processors, consumers, and communities that rely on pollock, harvested from the central and western Gulf of Alaska. Individuals, businesses, communities, and specific fish stocks that rely on Chinook salmon that may be caught in the central and western Gulf pollock fisheries will continue to rely on the pollock fleet to voluntarily minimize their Chinook bycatch. However, vessels working independently in relatively short fisheries without a Chinook allowance do not have the correct economic incentives to stop fishing in an area to reduce their salmon catch. To stop fishing would result in reduced gross revenue (and likely net revenue) if other participants continue to fish - the TAC is harvested - and their catch is reduced. So, while harvesters may experience political and peer pressure to reduce Chinook catch under the status quo, the desire to maximize profits could lessen the reductions in Chinook catch that could be achieved.

Chinook Salmon Allowance (15,000 Fish) – under Alternative 2

Under this option the total Chinook PSC allowance for the central and western Gulf is set at 15,000 fish. Because the total allowance is set at 15,000 fish, any increase to one area results in an equal decrease to the other area. An option that gives the central Gulf the largest Chinook allowance gives the western Gulf their smallest allowance. Table ES- 1 shows the options considered by the Council ranked from low to high Chinook allowance in the central Gulf and from high to low in the western Gulf. Option b (2006-2010) would generate the smallest allowance for the central Gulf. Participants in the central Gulf would be allowed to catch up to 9,122 Chinook (61% of the allowance). Western Gulf participants would be allowed to catch up to 5,878 Chinook (39%). Option b (2001-2006 & 2008-2009) would allow central Gulf participants to catch the most Chinook. That option would generate a Chinook allowance of 11,612 fish (77%) in the central Gulf. The western Gulf would have their smallest allowance 3,388 Chinook (23%). All of the other options considered would fall within the range of Option b (2006-2010) and Option b (2001-2006 & 2008-2009).

Central Gulf

Selecting Option a with a 15,000 Chinook PSC allowance and requesting NMFS to manage to that amount, would result in the central Gulf pollock fishery being closed because the PSC allowance was taken during five of the eight years from 2003-2010. The earliest the fishery would have closed was February 26th (during 2005). A closure that early would shut the fishery down during the higher valued roe-season. Closing the fishery in March 2007 could also impact the roe-season. Closures that would have occurred during 2004, 2006, and 2010 would have occurred during the "D" season and would not have affected the higher value roe-season.

In the central Gulf the PSC allowance was not exceeded during 2003, 2008, or 2009. PSC allowances would be exceeded under all of the options during 2005, 2007 and 2010. Only the largest Chinook allotment would not be exceeded during 2004 and 2006.

Had the PSC limits been in place and NMFS was able to close the fishery precisely when the limit was reached, the maximum Chinook savings would have exceeded 10,000 fish during 2005, under most options, and 20,000 Chinook occurred in 2007. That year a savings of 20,000 Chinook to 22,500 Chinook would have been realized, depending on the option selected. During 2004, 2006, and 2010 the Chinook savings would vary from 0 fish to just over 3,200 fish depending on the year and option selected.

If one of the two areas is closed to pollock fishing while the other remains open, NMFS has the authority to roll-over up to 20% of the TAC of the area receiving the allocation. NMFS has not used this authority under the status quo, because Gulf pollock fisheries were only closed by the TAC being harvested or reaching the date the season ends. Under the proposed program, a fishery could be closed in one area because the Chinook allowance is taken before the start of the "B", "C", or "D" season. The authority for these transfers is found at §679.20 (a)(5)(iv)(B). For example, the central Gulf pollock fishery was projected to close during the "B" season in 2007. Chinook PSC allowances were not taken in the western Gulf. To maximize OY, the western Gulf TAC for the "C" season and "D" season would be increased to 120% of the original amount. The 20% increase in pollock would come from the unused "C" season and "D" season central Gulf TAC.

The amount of pollock that is estimated be foregone in the central Gulf ranged from about 30,000 mt in 2005 to no pollock being foregone in 2003, 2008, and 2009. During 2005 every option was estimated to be reduced by 14,141 mt. The 2010 pollock catch was estimated to be reduced under every option considered. Reductions ranged from about 200 mt to about 5,200 mt. During 2004 and 2006 the four largest Chinook allowances, resulted in no pollock reductions. All of the other options considered would reduce the pollock harvested by a range of about 1,200 mt to 6,500 mt.

Exvessel revenue forgone as a result of the PSC allowance being imposed was estimated by multiplying the pollock foregone by the exvessel pollock prices reported in the Economic SAFE document. Those prices do not account for price differences in the roe and non-roe seasons. Therefore, if all of the reductions occurred in the non-roe season the average exvessel price applied may over estimate actual exvessel revenue foregone. Because 2010 prices were not available when the analysis was conducted, estimates of exvessel revenue foregone during 2010 was not calculated.

The greatest exvessel revenue reductions were estimated to occur in 2005, where between \$6 million and \$9 million exvessel revenue decreases were projected. In 2007, the reduction was estimated to be about \$4.5 million under every option. All of the other years and options were projected to reduce exvessel revenue by less than \$2 million.

First wholesale prices from the Economic SAFEs were multiplied by the 98% of the metric tons of pollock estimated to be foregone to estimate the first wholesale value of pollock foregone. Only 98% of the pollock catch was used because the first wholesale price was based on retained catch. Discards of pollock in the pollock fishery are reported to be about 2% annually. Therefore, the catch amount was reduced by 2% to account for the pollock that may have been discarded. Using the 2% estimate of discards may slightly overestimate or underestimate the actual discards, but is expected to provide a reasonable estimate.

In the central Gulf the first wholesale revenue foregone ranged from about \$18.9 million to about \$27.6 million during 2005, depending on the option selected. During 2007, about \$11.0 million was foregone under every option considered. The revenue foregone in 2006 ranged from \$0 to about \$4.5 million.

Western Gulf

The western Gulf pollock fishery was projected to close because their PSC allowance is reached during either two or three of the eight years, depending on the option selected. The Western Gulf pollock fishers were estimated to reach their proposed PSC allowance under every option during 2005 and 2010. The 2005 fishery would reach the PSC allowance during the week ending on October 15th. The fishery would have closed the week ending on October 8th, under the two smallest allotments (Option b – using both time period but excluding 2007 and 2010 data). During 2010, all of the closure dates are in the “D” season (October) except the smallest allotment (Option b – excluding 2007 and 2010 from the 2001-2010 time period). Only the five smallest allotments would be triggered a closure in 2006. That year the fishery would have closed either two or four weeks into the “D” season.

In the western Gulf the bulk of the savings would have occurred in 2010. That year over the Chinook savings would have been over 25,000 fish. Under the other years and options when savings were estimated, the savings were always less than 2,600 fish. In most cases no Chinook savings were estimated, and when they were estimated they were generally less than 1,000 fish.

Pollock foregone in the western Gulf predominately occurred in 2010, when 7,210 mt of pollock were estimated to be forgone. The smallest PSC allowance would have resulted in the 2005 pollock fishery being closed with 5,251 mt of pollock catch remaining. Pollock fishing in 2006 would have closed with relatively small amounts of pollock left unharvested. All other years considered would not have been affected by the proposed PSC allowances.

From 2003 through 2009 the proposed options would have had little impact on exvessel revenue. The five options that generate the smallest western Gulf Chinook PSC allowances would have reduced 2006 exvessel revenue. Exvessel revenue would have been decreased during 2005 under the two smallest PSC limits. All other years and options would not have resulted in a decrease in exvessel revenue. The greatest impact would likely have been seen in 2010, the only year that exvessel prices were not available. To provide some context of the reduction in revenue that may have occurred, the metric tons of pollock foregone was multiplied by the smallest and largest exvessel price from 2003-2009. The range of exvessel prices result in a \$1.5 million to \$2.9 million reduction in exvessel revenue. Given, the change in exvessel prices that were reported between 2003 and 2009, and preliminary indications of 2010 prices, the actual value is expected to fall within that range.

First wholesale pollock revenue foregone in the Western Gulf was estimated to be relatively small from 2003 through 2009. The two suboptions under Option b were estimated to reduce processor's 2005 revenue by about \$4.5 million. No other options were estimated to reduce first wholesale revenue that year. During 2006 the five smallest PSC allotments would reduce revenue in the Western Gulf by \$1.0 million or less. As discussed under the exvessel revenue section, the largest reductions would have

occurred during 2010. However, first wholesale prices are not yet available for that year. To estimate a range of the revenue reductions that may have occurred in 2010, the lowest and highest annual price from 2003-2009 were multiplied by the metric tons foregone. That calculation yields an estimated reduction in first wholesale revenue of \$5.4 million to \$7.1 million.

25% Overage Provision

The Council included an option that would allow a Chinook salmon PSC allowance to be exceeded by up to 25% in one of three consecutive years. This provision is applied by area. Because participants are only allowed to exceed their PSC limit every third year it will require NMFS to more closely enforce the limit during years it cannot be exceeded. The alternative also implies that exceeding the cap by just one Chinook would trigger the requirement that the cap is not exceeded the following two years. Therefore, the cap should not be viewed as allowing the vessels in the area to take full advantage of a 25% overage of the cap every third year.

It is assumed that NMFS will manage the Chinook PSC allowance so that it does not exceed 125% of the limit during years the buffer is available. During years the buffer is not available the pollock fisheries will be managed to keep the Chinook catch within the 100% of the set allowance. Under this interpretation, if the "C" season closed with 10 Chinook remaining under the limit, the "D" season would be opened using the 25% buffer that is available. Assuming that more than 10 Chinook were taken in the "D" season and the PSC limit was exceeded, the pollock fishery would be managed more tightly the following two years to ensure that the fleet does not exceed the PSC limit selected.

The central Gulf fleet would have exceeded the PSC allowance for some options from 2004 through 2007. Option a, Option b (without the suboption - to drop 2007 and 2010 data), Option c(i) (without the suboption), Option c(ii), and Option c(iii) would have exceeded the PSC allowance in 2004. Because they were also over the PSC allowance in 2005 and 2006, they would have been managed not to exceed the allowance those years. Because the fleet was only over their allowance by 588 Chinook to 1,534 Chinook they would not have utilized their entire 25% buffer that would have allowed them to harvest 2,300 Chinook to 2,800 Chinook over the allowance. However, it would allow them to use the 25% buffer again in 2007 after two years had elapsed. Because the fleet did not exceed their PSC allowance in 2008 or 2009, they would have been eligible to use the 25% buffer again in 2010.

Option b (using the suboption to drop 2007 and 2010 data) and Option c(i) (with the suboption) would have allowed the fleet to stay within their PSC allowance in 2004. In 2005 they were over the allowance by about 10,000 Chinook. That year the pollock fleet would have been allowed to use the 25% buffer, which would have allowed the fleet to harvest about 1,000 mt more pollock.

The impact of the 25% buffer is somewhat limited in the western Gulf. From 2003 through 2010 the fleet would not have been prohibited from fishing pollock because of Chinook allowance under all but two options. Option b (with suboptions) would have exceeded the Chinook PSC allowance in 2005, 2006, and 2010. Using the buffer in 2005 would have likely allowed the fleet to harvest the 5,251 mt of pollock that would have been foregone. In 2006 they would have still been required to stop fishing early, and would have foregone either 308 mt of pollock (Option b and Option c(i) – both using 2006, 2008, and 2009 data and Option c(i) and Option c(ii) – both using 2001-2006 and 2008-2009 data) or 1,401 mt of pollock (Option b – using 2001-2006 and 2008-2009 data). If the 25% buffer were utilized in 2010 the Chinook allowance may have allowed the fishery to stay open so that about 6,500 mt more pollock would be harvested. However, more than 21,000 Chinook were estimated to be caught during the next to last week of the fishing year. So the 25% buffer would have been exceeded by a substantial amount unless NMFS had more timely/accurate information on Chinook catch rates and could close the fishery earlier in the week, when it was determined the PSC allowance would be exceeded.

Chinook Salmon Allowance (22,500 Fish) – under Alternative 2

A Chinook salmon allowance of 22,500 fish would provide a range of 13,682 fish to 17,418 fish to participants in the central Gulf. The range in the western Gulf would be 8,818 fish to 5,082 fish. Table ES- 1 shows the Chinook salmon allowance that results from each of the options considered.

Central Gulf

The central Gulf pollock fishery is estimated to have closed in 2005 as early as March 19th and as late as October 8th, depending on the option selected. The large difference in dates indicates that less than 4,000 Chinook salmon were taken over that time period. In 2007, the fishery is projected to have closed on March 24th under every option. A single closure date for all options indicates that more Chinook salmon was estimated to have been taken that week than the range between the smallest and largest Chinook PSC allowances.

If the proposed PSC allowances had been in place in 2005, between 4,011 Chinook (Option b with suboption using 2001-2006 and 2008-2009 data) and 7,747 Chinook (Option b using 2006-2010 data) would have been harvested in excess of the PSC limit. More Chinook were caught during 2007, so the PSC limit was exceeded by 14,229 Chinook (Option b with suboption using 2001-2006 and 2008-2009 data) to 19,965 Chinook (Option b using 2006-2010 data).

Pollock would only be foregone in the central Gulf during the 2005 and 2007 fishing years. The amount of pollock that would have been foregone ranged from a low of 2,470mt to a high of 12,092mt, depending on the option selected. During 2007 all of the options considered are estimated to decrease the amount of pollock that would have been harvested by 14,141mt. All other years the options considered would have provided the Central Gulf pollock fleet a sufficient number of Chinook salmon to harvest the pollock caught that year.

Exvessel pollock revenue foregone in 2005 ranged from \$0.68 million to \$3.31 million. Exvessel pollock revenue foregone in 2007 was \$4.49 million under all options, and exvessel revenue foregone in 2010 cannot be estimated because the price data are not available. Based on the information provided in this table, the total amount of exvessel revenue foregone by the Central Gulf pollock fleet would have ranged from just over \$5 million to just under \$8 million, from 2003 through 2009, if the proposed Chinook PSC limits had been in place during that time period.

Processors are estimated to lose between \$2.09 million and \$10.25 million in first wholesale revenue during 2005, if one of the PSC allowances under Council consideration were in place that year. All of the options the Council is considering are projected to reduce first wholesale revenue by \$10.9 million in 2007. The PSC limit was not exceeded any other year, so the first wholesale revenue is not reduced.

Western Gulf

The western Gulf pollock fishery is projected to close because the PSC allowance is reached under some options in 2005 and all options in 2010. The fishery is always projected to close after the “D” season had been opened. The 2005 fishery would reach the PSC limit under the three smallest Chinook PSC allowances. The fishery is projected to have closed on October 15th, if these three options were in place. During 2010, all of the closure dates are in the “D” season (October 2nd or October 9th).

Option b, when the 2007 and 2010 data are excluded from the two PSC allowance calculations, and Option c(i), when 2007 and 2010 data are excluded from the 2001 through 2010 time series, are the only three options that would not provide sufficient Chinook salmon PSC to cover the estimated Chinook catch

in the pollock fishery. Under those three options, the PSC allowance was exceeded by 68 Chinook to 869 Chinook. Given the lag in time Chinook salmon catch is reported, those options may not have resulted in any Chinook savings unless the fishery was managed very conservatively. Estimated Chinook bycatch exceeded all of the PSC allowance options in 2010. That year the PSC allowance was exceeded by 22,763 Chinook to 26,499 Chinook depending on the option selected. It was estimated that over 21,000 Chinook were caught the week that fishery would close. About 4,000 Chinook were caught the following week, so the actual expected Chinook savings could be expected to be between 4,000 Chinook and the number listed in the 2010 column. The actual savings would depend on NMFS' ability to close the pollock fishery when the PSC allowance is reached.

All of the PSC allowances were sufficient to allow all the pollock to be taken from 2003 through 2009. This assumes the fishery would close to directed fishing at the end of the week the PSC allowance is taken. During 2010 the fishery would have closed with between 6,119 mt and 7,210 mt of pollock not harvested.

The proposed Chinook PSC allowances are estimated to have been a constraint only during 2010. Price exvessel data are not available for that year. However, if lowest exvessel price (\$209/mt from 2003–2009) were multiplied by the smallest estimate of harvest foregone in 2010 (6,119 mt) the fleet would have lost about \$1.3 million. If the highest exvessel price (\$399/mt) were multiplied by the largest estimate of pollock foregone in 2010 (7,210 mt) the fleet would have lost about \$2.9 million. So, the amount of exvessel revenue lost as a result of the PSC allowances considered for the western Gulf may be between \$1.3 million and \$2.9 million.

Proposed PSC allowance options only reduce pollock harvest during the 2010 fishing year. Because first wholesale prices are not available for 2010, the projections were not made. However, if the smallest reduction in pollock harvest during 2010 (6,119 mt) were multiplied by the lowest first wholesale price from 2003-2009 (\$752/mt) the reduction in first wholesale revenue is \$4.6 million. Multiplying the largest reduction in pollock harvested (7,201 mt) by the greatest price (\$988/mt) yields an estimated \$7.1 million reduction in first wholesale revenue. The actual result is likely between those two estimates.

Chinook Salmon Allowance (30,000 Fish) – under Alternative 2

The central Gulf Chinook salmon allowance ranged from 18,243 fish to 23,224 fish, depending on the option selected. Western Gulf Chinook salmon allowances ranged from 6,776 fish to 11,757 fish, depending on the option selected. Table ES- 1 reports the Chinook salmon allowance by area for all the options that are considered in this analysis.

In the central Gulf the PSC allowance was estimated to be taken during two of the eight years, from 2003-2010. The 2005 fishery is projected to have closed on October 22nd under all of the five largest Chinook salmon allowances. The four largest allowances would provide sufficient Chinook salmon to prevent the allowance from being exceeded. The fifth largest allowance would have resulted in the fishery closing a week later than the other options. The 2007 fishery is projected to have closed on March 24th under every option, just as it did under the 22,500 Chinook salmon allowance and the 15,000 Chinook salmon allowance. A single closure date for all PSC allowances and options indicates that more Chinook salmon were estimated to have been taken that week than the range between the smallest Chinook PSC allowance proposed using the 15,000 Chinook PSC allowance and the largest option using the 30,000 Chinook salmon allowance.

The western Gulf pollock fishery is projected to close because the PSC allowance is reached under all options during 2010. The fishery is always projected to close on October 9th, after the “D” season had

been opened. Chinook PSC allowances proposed would be sufficient to cover Chinook salmon catch in the pollock fishery during all other years considered.

Central Gulf

PSC allowances considered would have been exceeded under all options except the four largest allowances in 2005. All Chinook PSC allowances would only have been exceeded during 2007. That year the PSC limits were exceeded by an estimated 8,423 Chinook salmon to 13,404 Chinook salmon, depending on the option selected. The PSC allowances were only exceeded those two years in the central Gulf.

In the central Gulf the PSC allowances were estimated to reduce the amount of pollock harvested during 2005 and 2007. PSC allowances were not constraining for any option in any other year considered. During 2005 the reduction was estimated to be 641 mt under the 13 options that generate the smallest PSC allowances. Pollock harvests were estimated to be reduced by 14,141 mt under all the options considered for 2007. That is the same reduction that was estimated under the 22,500 Chinook cap for all the options in 2007. Therefore, the only difference between the 22,500 Chinook allowance and the 30,000 Chinook allowance in the central Gulf (over the years considered) is the pollock harvest in 2005. The difference in 2005 ranged from about 2,400 mt to over 11,000 mt.

Reduction in exvessel revenue is estimated to be about \$180,000 under the 13 options that generate the smallest PSC allowances in 2005. The remaining five options would not reduce the exvessel revenue. When the 22,500 Chinook cap was considered, the reduction in exvessel revenue ranged from \$680,000 to \$3.31 million, depending on the alternative selected. The exvessel revenue reduction in 2007 is estimated to be \$4.49 million for every option under Council consideration. This is the same exvessel revenue reduction that was estimated under the 22,500 Chinook allowance. Exvessel revenue is not reduced under any of the other options in any of the years considered.

Estimates of first wholesale revenue reductions for 2005 were either \$0 or \$540,000, depending on the option. First wholesale revenue was estimated to decline by \$10.96 million, for all options, in 2007. No other year/option combination was projected to decrease first wholesale revenue in the central Gulf.

Virtually all of the first wholesale revenue foregone by processors in the central Gulf would take place at Kodiak plants. Central Gulf pollock was processed in Kodiak except for limited amounts in Seward, King Cove, and Sand Point.

Western Gulf

The only year the PSC limit was estimated to be exceeded was 2010. That year the limit was exceeded by 19,824 Chinook to 24,805 Chinook, depending on the option selected. The majority of those salmon were caught over a two week period during the "D" season.

The reduction in pollock catch is estimated to be the same under the 14 largest allowances as they were when the overall Chinook PSC allowance was based on 22,500 Chinook salmon. Under those options the estimated pollock catch was reduced by 6,119 mt. The options that yielded the four smallest PSC allowances also reduced the estimated pollock catch by 6,119 mt under the 30,000 Chinook allowance options. When the overall allowance was 22,500 Chinook salmon, the options that yielded the four largest PSC allowances reduced pollock catch by 7,210 mt. So, the difference between the 22,500 Chinook allowance and the 30,000 Chinook allowance over the years considered in the western Gulf is about 100 mt of pollock from 2003 through 2010.

Estimates of reduction in exvessel revenue are not provided. Reductions were estimated to only take place during 2010, and price data are not available for that year. However, all of the options that year were estimated to reduce pollock catch by 6,119 mt. If the smallest and largest exvessel prices over the 2003 through 2009 period were used to calculate the exvessel revenue foregone, the estimates would be \$1.3 million and \$2.4 million. The actual reduction in exvessel revenue may fall within that range.

First wholesale revenue reductions in the western Gulf only occurred during 2010, when price data are not available. If the smallest and largest first wholesale price from 2003 through 2009 were used to calculate the foregone revenue, the estimates would be \$4.6 million and \$6.0 million. The actual result will fall within that range, if the 2010 price is within the 2003-2009 range of prices.

Mid-year Implementation under Alternative 2

The Council requested that if the proposed PSC allowances are implemented during a fishing year, that the annual limits be reduced by the number of Chinook salmon that are estimated to have been used during the seasons that are over, based on historic data used to determine the PSC limits. It is assumed that the program would be implemented between one of the four pollock seasons that have been established for the Gulf. Therefore this analysis will consider the number of salmon that were added to the Chinook PSC limit during the "A", "B", "C", and "D" pollock seasons in the Central and Western Gulf. If the program is implemented after the "B" season, for example, only the Chinook for the "C" and "D" seasons would be available to the harvesting fleet during that year.

Table ES- 2 shows the percentage of the total PSC allowance that that would be available period to the start of each season. To calculated the seasons, it was assumed that all catches with a week ending date before March 10th is "A" season catch; all remaining catch with a week ending date before August 25th is "B" season catch; all remaining catch with a week ending data before October 1st is "C" season catch; and all other catch with a week ending date on October 1st or later in the year is "D" season catch. However, the tables with the actual numbers of Chinook salmon are provided in Appendix 2.

Table ES- 2 Percentage of Chinook PSC cap by season for each alternative

Alternatives	Years	Percentage of Areas Total Chinook Allocation by Season							
		Central Gulf (620 & 630)				Western Gulf (610)			
		"A" Season	"B" Season	"C" Season	"D" Season	"A" Season	"B" Season	"C" Season	"D" Season
Option a (based on pollock TAC)	2006-2010	100%	76%	37%	22%	100%	82%	58%	32%
	2001-2010	100%	76%	35%	19%	100%	79%	62%	34%
Option b (based on Chinook bycatch)	2006-2010	100%	86%	30%	17%	100%	90%	83%	77%
	2001-2010	100%	74%	34%	22%	100%	89%	82%	74%
Suboption: exclude 2007 and 2010 data)	2006 & 2008 & 2009	100%	77%	40%	19%	100%	69%	50%	39%
	2001-2006, 2008-2009	100%	63%	39%	26%	100%	80%	67%	56%
Option c(i)	2006-2010	100%	83%	32%	19%	100%	88%	77%	66%
Using 25% from	2006 & 2008 & 2009	100%	77%	40%	20%	100%	72%	52%	37%
Option a and 75%	2001-2010	100%	74%	34%	21%	100%	87%	77%	64%
from Option b	2001-2006, 2008-2009	100%	67%	38%	24%	100%	80%	66%	51%
Option c(ii)	2006-2010	100%	81%	34%	20%	100%	88%	71%	55%
Using 50% from	2006 & 2008 & 2009	100%	77%	39%	21%	100%	76%	54%	38%
Option a and 50%	2001-2010	100%	75%	34%	21%	100%	84%	72%	54%
from Option b	2001-2006, 2008-2009	100%	70%	37%	22%	100%	80%	65%	45%
Option c(iii)	2006-2010	100%	79%	35%	21%	100%	84%	65%	43%
Using 75% from	2006 & 2008 & 2009	100%	77%	38%	22%	100%	79%	56%	34%
Option a and 25%	2001-2010	100%	76%	35%	20%	100%	82%	67%	44%
from Option b	2001-2006, 2008-2009	100%	73%	36%	21%	100%	79%	64%	39%
Maximum Allocation		100%	86%	40%	26%	100%	90%	83%	77%
Minimum Allocation		100%	63%	30%	17%	100%	69%	50%	32%
Mean Allocation		100%	76%	36%	21%	100%	81%	66%	49%
Median Allocation		100%	76%	36%	21%	100%	81%	66%	44%

Source: NOAA Catch Accounting Data

Other Impacts of Alternative 2

Pollock Harvesters

If participants in one of the Gulf pollock fisheries were forced to stop fishing because the Chinook salmon allowance was taken would they have the opportunity to increase effort in other fisheries to recoup some of the foregone revenue? Most of these central Gulf vessels also participate in the Gulf Pacific cod and flatfish fisheries. Because they are involved in the Pacific cod fishery they are unlikely to increase participation in that fishery. They may be able to slightly increase participation in the flatfish fisheries, but those fisheries are driven by PSC allowances and the opportunity to utilize these fisheries to increase revenue is thought to be minimal for most participants. Western Gulf vessels participate in the early Pacific cod seasons. However, sea lion regulations have limited their ability to participate in the later Pacific cod fisheries. These vessels would have very limited opportunities to harvest other groundfish species if the pollock fishery were to close after the "B" season. Perhaps the best opportunity to increase revenue is to fish in another Gulf pollock fishery. The West Yakutat fishery could realize increased effort but it has a relatively small TAC and vessels that are participating in that fishery also typically fish the central or central and western Gulf pollock fisheries, if their LLP is endorsed to fish those areas. The 2010 West Yakutat TAC was 2,031 mt. Increased effort in that fishery could displace current participants, because of the small TAC. Another option is for persons that fish in the central Gulf pollock fishery could move to the western Gulf or vice versa. However, markets could constrain entry into those fisheries. In summary, vessels that are displaced because of a Chinook PSC allowance closing their fishery are not expected to be able to recoup that revenue in other fisheries.

Close monitoring of the Chinook PSC allowances and time lags from when Chinook salmon are caught and offloaded from the vessel and counted, may result in the pollock fishery being closed before the Chinook PSC allowance is taken. NMFS may then need to reopen the fishery if a sufficient number of Chinook salmon remain unharvested. If that type of closure occurred at the end of fishing season, the amount of pollock that may be rolled over to the next season could be limited by Stellar Sea Lion regulations. Regulations pertaining to the central and western regulatory areas found at §679.20 (a)(5)(iv)(B) state that pollock may be rolled over so long as *any revised seasonal apportionment does not exceed 20 percent of the seasonal TAC apportionment for the statistical area*. So if a season was closed too early, given uncertainty with the number of Chinook caught, the amount of pollock that may be rolled over to the following season is limited to no more than 20% of the seasonal apportionment. However, the regulations leave the option open to rollover some of the underharvest to the other statistical area. For example, if the central Gulf were closed (or closed too soon) up to 20% western Gulf area's pollock TAC could be rolled over from the Central Gulf to the Western Gulf.

Pollock Processors

In addition to the reductions in first wholesale revenue described above, two other impacts on processors are discussed in terms of early closures. The first is how can processors utilize outside workers that are brought in to process pollock if the pollock fishery closes early? The second is impacts on markets if processors are unable to fulfill contracts because the pollock fishery is closed early.

When processors prepare for a fishing year, they determine the number of workers that are needed to process the deliveries that are expected. Because of the remote locations and the relatively small communities the processors operate, they are required to bring in labor from outside the local community. Closing the pollock fishery early could require the management/ownership of the plant to determine how those employees should be utilized. Employees could be given different jobs, if there are other species being processed or cleanup/maintenance is needed, or they would be sent home. Employees would be sent home if the cost of keeping them at the plant exceeded the cost sending them home and bringing them back when the fishery reopens.

Pollock fishery closures may also impact markets. Processors typically estimate the amount of product that will be produced from a fishery and begin marketing that product before the season. If the pollock fishery was closed early because of Chinook salmon allowances being taken, processors may not be able to fulfill their contracts to deliver product. The uncertainty created could result in the loss of market share or lower prices.

Chinook Users

The lack of information on the origins and return rates of Chinook salmon taken in the Central Gulf and Western Gulf pollock fisheries, limits the analyst's ability to draw conclusions on the impacts to Chinook user groups. Reduction in the number of Chinook salmon caught in the pollock fisheries are provided in this document for each option considered by the Council. However, those estimates are not intended to indicate the number of additional Chinook that will be available to the subsistence, sport, and commercial users will increase by that number.

Chinook taken in the pollock trawl fishery are generally smaller than fish utilized by those groups. Observer program estimates of the average size of a Chinook salmon taken in the pollock trawl fishery is approximately 7.6 lbs². Natural mortality of these smaller fish will reduce returns to the terminal fisheries. Estimates of the natural mortality rates are unknown.

The locations where Chinook will return - those not caught because of the proposed PSC allowances - cannot be determined with data that are currently available. Information on the origin of Chinook taken in the Bering Sea trawl fisheries allowed a more detailed analysis to be conducted for those fisheries (NPFMC 2010). Models were developed that allowed estimates to be generated on the number of Chinook that would return to specific locations. Data required to derive those estimates must be collected from Chinook taken as bycatch in the Gulf pollock fishery before similar projections can be generated.

Chinook Stocks

The impact of reducing Chinook salmon bycatch in the Gulf pollock fisheries on Chinook stocks will depend on the stocks of origin of the bycatch. Reducing bycatch of stocks listed and threatened or endangered will have a greater impact than reducing the bycatch of hatchery released fish. However, until additional information is available conclusions cannot be made for specific stocks.

Increasing Observer Coverage on the < 60' Fleet under Alternative 2

This alternative would extend the existing 30% observer coverage requirements for vessels 60'-125' to trawl vessels less than 60' directed fishing for pollock in the central or western GOA. These increased coverage requirements would be replaced if the Observer Restructuring amendment approved by the Council during their October 2010 meeting is implemented by Secretary of Commerce. Therefore, the duration of the increased costs estimated in this section may only be in place for about one year.

A total of 20 unique vessels, less than 60 ft in length, fished pollock in the central and western GOA during 2007-2009. Between 16 and 18 unique vessels participated in this fishery within any given year. The effort of an average vessel in this fleet can be characterized as taking between 7 and 12 trips a year, each trip lasting between 2.1 and 2.5 days for a total of 17.6 to 24.8 days per year. Assuming a 30% sampling fraction by observers in terms of days per year, it can be estimated that the average vessel would be required to obtain between 5.3 and 7.4 days of observer coverage. Fleet-wide, these calculations translate to between 95 and 119 total days of observer coverage for the less than 60 ft fleet, with a mean value of 107 days.

² Personal communication with Michael Fey, based on 2003 to present observer data.

Alternative 2 Component 2 Cost to the Industry: NMFS estimates that the daily cost of observers on vessels operating out of King Cove and Sand Point would be \$467.17. An average of 17 vessels less than 60' in length directed fishing for pollock in the Central or Western GOA would incur the full cost of carrying an observer for 30% of the estimated average of 108 fishing days. The average total cost for that observer coverage would be \$50,221 (range = 44,228 – 55,500). The average cost of observer coverage per vessel would be \$2,954 (range = \$2,460 – \$3,469).

Alternative 2 Component 2 Cost to NMFS: NMFS estimates that each day of additional observer coverage costs the agency \$130. Based on the 2007 to 2009 data, we may expect an increase of about 108 observer days if the existing 30% observer coverage requirements for vessels 60'-125' were extended to trawl vessels less than 60' directed fishing for pollock in the Central or Western GOA. These additional observer coverage days would cost NMFS \$13,975 on average, a cost that is not currently identified in NMFS's budget.

Mandatory Cooperative Membership – Alternative 3

Although the effects of the alternative are likely to vary across the two management areas (Central Gulf and Western Gulf), particularly in the first few years of the program, some generalizations apply. The first effect will be the need for fleet members to develop the required cooperative associations and agreements. These contracts are likely unfamiliar to a portion of the fleet in each area (particularly in the Western Gulf, where a majority of the fleet appears to have no cooperative fishing experience). The negotiation of agreements could be difficult, particularly for those fleet members that have no experience with these types of fishing arrangements. The ability to reach agreement should be aided by past fishing arrangements that have been made in both areas.

The most notable effect of the alternative will be increased fleet coordination of harvests and harvest practices, as the cooperatives require new increased communication concerning Chinook salmon bycatch and coordinate effort to limit that bycatch. With no allocation of target species, however, cooperatives (and their members) will continue to participate in a race for pollock, constrained only by the measures intended to address Chinook salmon bycatch. Measures will generally be limited to modifying members' effort to limit Chinook salmon PSC usage, as opposed to putting direct limits on members' Chinook salmon PSC usage.³

At least at the outset of the program, cooperatives are likely to use the reporting requirements to identify times and locations of relatively high (and low) Chinook salmon bycatch. Depending on the cooperative agreements, the pace of fishing could be slowed by these reporting requirements and responses to reported information. At the beginning of a season, it is possible that only a few vessels will fish, taking relatively small tows to determine the extent of Chinook salmon bycatch that may be expected in different areas. If adopted, this practice might delay the start of fishing for some vessels. In response to information received through either early season test tows or inseason bycatch reports, effort may be deployed in different locations, becoming more concentrated in areas that experienced lower Chinook salmon bycatch and decreased (or perhaps eliminated altogether) in areas of higher bycatch. This redistribution of effort in the fishery is another expected effect of this alternative. The extent of any redistribution is difficult to predict and will depend not only on the distribution of Chinook salmon bycatch on the fishing grounds, but also the participants' estimates of Chinook salmon bycatch rates.

³ Although some performance standards might be applied within the cooperatives to create individual incentives to limit bycatch, those measures are unlikely to be adopted initially, as knowledge of the causes of Chinook salmon bycatch and the means of avoiding that bycatch is limited.

Some cooperatives may promote gear modifications and other changes in fishing practices to control Chinook salmon bycatch. As with other aspects of the cooperative agreements, provisions concerning gear modifications and fishing practices are likely to change over time, as experience is gained with different fishing technologies and methods. The alternative will also require cooperatives to include a provision in their agreements for full retention of salmon by all member vessels. This requirement, in and of itself, will have little effect on participants, as few (if any) participants currently comply with the current discard requirement because of the safety and logistical challenges associated with sorting catch on deck and discarding salmon.

Overall, the effect of this alternative on fishing operations will be to bring added attention to Chinook salmon bycatch. Under the status quo, only social pressures create an incentive for participants in the pollock fishery to avoid Chinook salmon PSC. This alternative should ensure that Chinook salmon bycatch is a consideration at all times for all participants, as compared to the status quo or the alternative creating a single annual cap for each management area. Since the pollock fishery is prosecuted over four seasons, it is possible that some participants in the early seasons (when the catches are of the greatest value because of roe and the annual cap is least likely to bind) may give little attention to Chinook salmon bycatch. Participants who do not intend to participate in the later seasons may, in fact, completely disregard Chinook salmon bycatch, if they do not perceive a potential for the cap to be reached in the early seasons. Requiring these participants to join cooperatives should ensure some level of attention to Chinook salmon bycatch and may be fairer to the participants that depend on the fishery during the later seasons, who could suffer, if the fishery closes later in the year, in part, due to bycatch in the early seasons.

Added costs of this alternative fall into a few specific categories. Contracting costs (including the services of an attorney) and cooperative management costs will also be incurred in the development of cooperative agreements each year. These costs are likely to be highest in the first year or two of the program, when the majority of the terms of cooperative agreements are being defined. Cooperative management costs will also be incurred, likely through a cooperative manager hired to oversee administration of the cooperative agreement and to complete cooperative reports.

Operational costs could increase through efforts to avoid Chinook salmon. These costs will be incurred through any system using test tows to locate grounds with acceptably low bycatch rates, gear modifications and other changes in fishing practices that decrease catch per unit effort or limit gear deployments (such as limits on fishing during certain times of day). To the extent that vessels delay starting fishing, time costs could be incurred (if vessels are unable to shift effort to other fisheries). In addition, costs could be increased, if vessels need to travel further from port to reach fishing grounds with lower Chinook salmon bycatch rates. The effects of these factors are uncertain, as the distribution of Chinook salmon on the grounds during the fishery is not well understood. In addition a cooperative will also need to incur costs associated with monitoring. These costs will vary with choices of monitoring. Cooperatives are likely to attempt to keep monitoring costs down, while maintaining monitoring at a level needed to ensure fairness.

The effect of this alternative on processors will likely be minimal, but may be significant at times. To the extent that cooperatives organize harvest activity and deliveries in a predictable manner, processors are likely to benefit from the cooperative structure. On the other hand, to the extent that cooperatives redirect fishing activity and deliveries or suspend fishing on short or little notice, processor operations could be disrupted. Processors could also be affected, in a very minor way, through the implementation of a system to count or sample salmon. Although these systems are implemented in several fisheries, they could have a minor effect on processing rates, as processors must accommodate these efforts. This effect is expected to be very small.

Concerns with mandatory cooperatives under Alternative 3

NMFS has raised concerns that the cooperative alternative (including approval of annual cooperative contracts and any penalties for violation of the cooperative agreement) must be administered in a manner that maintains NMFS' management authority over the fishery. Whether cooperatives would be able to serve their intended purpose, while maintaining a level of oversight that maintains that authority is uncertain. This concern is specific to this action because of the mandatory nature of the cooperatives proposed (i.e., the alternative requires cooperative membership to participate in the fishery). Under other cooperative programs created by the Council, eligible permit holders are able to participate in a fishery outside of a cooperative under an alternative management structure, such as individual fishing quotas or a limited access fishery. Under this alternative (as currently defined), no opportunity to fish outside of a cooperative would be permitted. As such, the cooperative structure would need to be defined and implemented such that NMFS defines the cooperative rules and the implements of those rules under its management authority over the fisheries.

Two aspects of the cooperative, in particular, raise this concern. First, annual contract approval would require that NMFS review the contract making an independent assessment of whether 1) those measures proposed are permitted measures (as defined by the cooperative alternative) and, 2) those measures serve the intended bycatch control purpose, to the extent that the cooperative is provided latitude to define specific rules to serve that purpose. For example, if a cooperative establishes criteria for identifying a Chinook salmon hotspot, those criteria would need to be approved by NMFS. Whether these fact based assessments can be completed in a timely manner that allows a cooperative to be approved prior to the fishery opening is uncertain. While some cooperatives might choose to work with the agency in developing their contract, to prevent a possible delay in contract approval, delays could occur despite those efforts. These determinations could also be delayed, if some persons wishing to participate in the fishery contest certain provisions in the cooperative contract to the agency. Timely cooperative formation would be imperative in a fishery that requires cooperative membership for participation.

A second issue certain to arise is that cooperative penalties would need to be administered in a manner that provides an opportunity for hearing consistent with the applicable provisions of the Magnuson Stevens Act and the Administrative Procedures Act. Certain of these notice and hearing requirements would most likely apply to most standdown and financial penalties. The benefits that arise from a cooperative system for addressing Chinook salmon bycatch are dependent on the flexibility to respond quickly to information. For example, suspensions of fishing in a hotspot would need to happen as soon as the hotspot is identified. To achieve this flexibility cooperatives rely on the threat of penalties that may be efficiently and predictably administered. Imposition of penalties that require compliance with NMFS administrative processes are likely to be delayed. These delays may make time sensitive penalties (such as standdowns) wholly ineffective.⁴ Monitoring by the cooperative might also need to comply with NMFS' standards for penalties to be enforceable. In addition, cooperative penalties may not be consistent with NMFS' penalties, adding substantial uncertainty concerning the consequences of failing to comply with a cooperative measure. Whether the benefits of a cooperative program could be achieved, given these requirements and uncertainties concerning the administration of the cooperative contract is questionable.

An additional concern arises from a mandatory reporting of catch data within cooperatives. Any such reporting requirement would need to comport with data confidentiality constraints. Whether confidentiality requirements could be satisfied requires additional consideration. Determining the prevalence of Chinook salmon bycatch will require vessel level catch data (including both pollock catches and Chinook salmon catches). A cooperative requirement to share these data with a private entity (i.e., the

⁴ Tiering of vessels might also be subject to notice and hearing requirements, as differential treatment of permit holders could be construed as a penalty.

cooperative) raises questions concerning whether a person would be required to divulge confidential information by requiring cooperative membership to participate in the fishery.

A few alternative management approaches might be suggested to the cooperative structure proposed in this alternative. The simplest approach would be to allow participants in the fishery complete discretion concerning private arrangements to be undertaken to control Chinook salmon bycatch. The Council would take no regulatory action to facilitate these arrangements, but such arrangements may arise, if fishery participants perceive a need to address Chinook salmon bycatch due to either social pressures or the potential constraint of a PSC limit, in the event the Council elects to adopt such a limit under Alternative 2. Since these arrangements would be wholly voluntary, they would not be subject to regulatory approval. The primary downside of these arrangements is that persons who choose not to enter the arrangement may derive an advantage in the fishery, which could create a disincentive for the formation of or participation in the arrangements.

Alternatively, the Council could develop a simplified structure for a system of mandatory cooperatives. Such a structure could explicitly establish cooperative measures, thereby limiting the potential that approval of a cooperative contract would be delayed beyond a fishery opening. The difficulty in such a cooperative structure would be defining the provisions for inclusion in the cooperative contract. At a minimum, the cooperatives might collect data concerning the distribution of Chinook salmon bycatch in the fishery. Other measures, such as processing those data to define hotspots (which could be used to inform participants concerning the distribution of Chinook salmon bycatch in the fishery) could be considered. While such an alternative might be considered, data confidentiality protections would need to be maintained, for such an alternative to be implemented. The means of maintaining those protections will need additional consideration, if such an alternative is advanced.

Additionally, the Council could reconsider cooperative structures that provide a limited access opportunity to persons who elect not to join a cooperative. The challenge in creating such a structure would be to allow cooperatives to advance measures to control Chinook bycatch while still providing a reasonable fishing opportunity in the limited access fishery. To provide cooperatives an opportunity to assess Chinook salmon bycatch, a variety of structures could be considered, but given the lack of good information concerning Chinook salmon bycatch in the Gulf fisheries, it would be difficult to assess the merits of any structure.⁵

Environmental Assessment

Pollock

Under the status quo, pollock is not overfished nor approaching an overfished condition. Catch quotas have been increasing since 2009, and the most recent stock assessment indicates that the trend of increasing TACs is expected to continue into the immediate future. The catch quota is apportioned spatially and temporally to reduce potential impact on Steller sea lions, and this action would not affect this apportionment. Under Alternative 2, a lower hard cap may result in the pollock fishery closing before the TAC is reached, while a higher hard cap would allow for pollock fishing at current levels, and impacts would likely be similar to the status quo fishery. Alternative 3 would establish bycatch cooperatives,

⁵ For example, a possible structure could allow cooperatives to undertake limited fishing (i.e., catching a small portion of the total allowable catch) in the first week of the fishery, with no fishing in the limited access. After that week, fishing could open for both cooperatives and the limited access with participants in the limited access fishery subject to a relatively restrictive trip limit. The trip limit would be intended to remove disincentives that might arise for cooperative measures that attempt to control bycatch by slowing catch rates. While such an approach is a possible means of allowing for cooperative/limited access fishery management structure, such a structure would require more input from participants and development through the Council process.

which would work to identify bycatch hotspots. If cooperatives are able to identify and avoid fishing in high bycatch areas, the pollock season could be as long as the status quo fishery or potentially longer. If pollock catch rates are lower in areas identified as outside of the bycatch hotspots, it may take more fishing effort to catch the pollock TAC. If the pollock TAC is not fully harvested, fishing will have less impact on the stock, and there will be no adverse impact on the pollock stock from the fishery. Any changes in fishing patterns that may result from the alternatives, however, would be monitored and updated in future stock assessment.

Chinook salmon

The primary impact of the pollock fishery on Chinook salmon is through direct mortality due to bycatch. The pollock fishery also incidentally catches salmon prey species, including squid, capelin, eulachon, and herring, however the catches of these prey species are very small relative to the overall populations of these species. With respect to direct mortality, there is no available evidence to link groundfish bycatch levels with impacts on salmon stock biomass levels.

In 2010, Chinook salmon run size was below average in most of the GOA, except in Chignik and Southeast Alaska where escapement goals were largely met. The Chinook stock composition of the GOA pollock fishery bycatch is not available, however the fishery has been documented to catch Chinook salmon from both Southeast Alaska and Cook Inlet, in the GOA. Estimates of Chinook salmon bycatch in the GOA groundfish fisheries vary considerably from year to year. Chinook salmon bycatch was high in the central GOA in 2007, especially low in 2008 and 2009, and high again in 2010, largely due to high bycatch in the D season in the western GOA. It is not possible to draw any correlation between patterns of bycatch and the status of salmon stocks, especially given the uncertainty associated with estimates of bycatch in the groundfish fisheries, and the lack of data on river of origin of Chinook salmon caught in the bycatch.

Alternative 2 would establish a PSC limit that would be an upper limit on the bycatch of Chinook salmon in the GOA pollock fisheries in the Western and Central GOA. This limit would represent an upper threshold of Chinook salmon bycatch in the GOA pollock fisheries, as the pollock fisheries will be closed when the limit is reached. The analysis looks retrospectively at Chinook salmon bycatch levels from 2003-2010, to see how many Chinook salmon would not have been caught had the cap been in place. This, of course, assumes that there would have been no change in fleet behavior under a PSC limit, which is unlikely. It does, however, provide some sense of whether a PSC limit would have resulted in salmon savings during a particular year.

In the Central GOA, 2007 was the highest bycatch year, and 2005 was also a higher bycatch year. Under all PSC limit and apportionment options (except the 30,000 Chinook limit using the options that generate the largest allocation to the Central GOA in 2005), the fishery would have closed early in those years, and salmon savings would have varied from 0 to 22,525 Chinook salmon. In other years the PSC limit would not have been triggered under some or all of the PSC limit apportionment options. In the Western GOA, 2010 was the highest bycatch year in the Western GOA, and the fishery would have closed early in 2010 under all PSC limit options. Salmon savings would have varied from 19,824 to 28,193 fish in 2010. In 2005, the Chinook savings under the 15,000 Chinook PSC limit ranged from 73 to 2,563 fish; in 2006, the savings was 0-1,141 fish, depending on the option selected. PSC limits more than 15,000 fish resulted in small or no Chinook savings in years other than 2010.

Evaluating what salmon savings may occur under the alternatives does not necessarily provide insight into potential impacts to the Chinook salmon stocks, however. The PSC limit and potential salmon savings in high bycatch years do not translate directly into adult salmon that would otherwise have survived to return to its spawning stream. Salmon caught as bycatch in the GOA pollock fisheries are

generally smaller salmon, with an average weight varying between 6 and 9 pounds. Some proportion of the Chinook salmon caught as bycatch would have been consumed as prey to other marine resources, or been affected by some other source of natural or fishing mortality.

In the Bering Sea Chinook salmon bycatch analysis (NMFS 2009b), an adult equivalent (AEQ) model was used to estimate a) how many of the bycaught salmon were likely to have returned to their streams as adults, and b) to which river system or region they would likely have returned. Many more Chinook salmon bycatch samples have been taken in the Bering Sea pollock fishery, which is subject to much higher levels of observer coverage. Consequently, in the Bering Sea, sufficient age and length data were available to construct a model estimating how many salmon are likely to have survived to adults. Additionally, bycatch composition estimates were available to provide some indication as to the origin of Chinook salmon taken as bycatch in the fishery. This meant that the Bering Sea analysis could include a quantitative impact analysis of salmon savings on salmon fisheries or communities. This analysis was not without controversy since the underlying data was largely obtained from relatively small sample sizes, collected opportunistically. For this GOA pollock analysis, we do not have sufficient data to develop an AEQ model. It is assumed that the pollock fishery could be catching Chinook salmon that originate from anywhere in Alaska or elsewhere, and it is not possible to estimate the proportion any stock has contributed to the bycatch. Therefore our ability to assess the impacts of reducing salmon bycatch on salmon populations is constrained.

If Chinook salmon bycatch is reduced as a result of this action it would likely have beneficial impacts on Chinook salmon stocks, and the harvesters and consumers of Chinook salmon, compared to the status quo. With a PSC limit in place, it is likely that Chinook salmon bycatch will be curtailed in years of high bycatch, such as 2010 in the Western GOA, and 2005 and 2007 in the Central GOA. Although coded wire tag recoveries provide reliable documentation of the presence of a specific salmon stock in the bycatch, the recoveries to date cannot be used to establish the relative abundance of stocks in the bycatch, nor to estimate the number harvested from any one stock as bycatch due to sampling issues. Coded wire tags do not represent the true composition of all stocks of Chinook salmon in the bycatch in the GOA groundfish fisheries. Since 1995, coded wire tags of Chinook salmon recovered in the GOA groundfish fisheries have originated from British Columbia, Alaska, Oregon, Washington, and Idaho. To the extent that this alternative reduces a source of direct mortality on Chinook salmon stocks, the impact to Chinook salmon overall is likely to be beneficial. Because we do not know the relative abundance of these stocks in the GOA pollock fishery bycatch, however, it is not possible to determine which, nor to what degree, these stocks are likely to be affected.

Alternative 3 would establish bycatch cooperatives, which would work to identify bycatch hotspots and reduce salmon bycatch by directing fishing away from areas producing high bycatch rates of Chinook salmon. The cooperatives may also institute other gear innovations or fishing practices that reduce salmon bycatch. As with Alternative 2, to the extent that Chinook salmon bycatch is reduced, thus reducing a source of direct mortality on the stocks, there are likely to be beneficial impacts to Chinook salmon stocks. It is not, however, possible to determine to which, nor to what degree, these stocks a benefit is likely to be attributed.

Under both alternatives, it does not appear likely that Chinook salmon bycatch would increase from the status quo. There are currently no bycatch control measures in place for Chinook salmon in the GOA pollock fishery. Either through action to avoid triggering a PSC limit that closes the pollock fishery, or through salmon bycatch avoidance measures instituted through cooperative agreements in the fisheries, or a combination of these actions, the pollock fleet is likely to be increasingly aware of the issue of Chinook salmon bycatch in the fishery, and particularly in high bycatch years, is likely to be actively making efforts to avoid high bycatch rates in order to preserve the opportunity to fully harvest the pollock TAC. It is possible that shifting the spatial or temporal distribution of the pollock fishery may impact some

particular Chinook salmon stocks more than others, but as we do not currently know the stock composition of Chinook salmon bycatch, this impact is not possible to assess. A more thorough discussion of potential fleet behavior resulting from these alternatives is discussed in the RIR. The conclusion, however, is that any impact to the Chinook salmon stocks as a whole, is likely to be insignificant or positive, as bycatch levels either remain the same or are reduced.

Other resource components

Under the status quo, marine mammal and seabird disturbance and incidental take are at low levels and are mitigated by current spatial restrictions on the GOA pollock fisheries. Under either of the alternatives, disturbance or incidental take is not expected to increase to a level that would result in population level effects on marine mammals or seabirds. Additionally, marine mammals and seabirds may be affected by changes in prey availability or prey density due to fishing, or benthic habitat alteration. In years where the hard cap constrains fishing, Alternative 2 may reduce the potential effects of the pollock fishery on prey availability. If the fleet spends longer time fishing in areas with low pollock catch rates to avoid salmon, there may be some increase to benthic habitat impacts and potential removals of marine mammal and seabird prey. However, this increase is unlikely to result in population level effects.

Previous analyses have found no substantial adverse effects to habitat in the GOA caused by fishing activities. Alternative 2 may reduce any effects on habitat that are occurring under the status quo. The potential effects on an area would be constrained by the amount of the pollock TAC and by the existing habitat conservation and protection measures. It is possible that impacts may increase slightly in other areas due to displaced fishing effort, particularly under Alternative 3, but in context of the entire GOA, these impacts are not likely to be substantial. Overall, the combination of the direct, indirect, and cumulative effects on habitat complexity for both living and non-living substrates, benthic biodiversity, and habitat suitability is not likely to be significant under any of the alternatives.

Management and Enforcement Considerations

NMFS estimates Chinook salmon bycatch for the Gulf of Alaska (GOA) pollock fishery based on data from the North Pacific Groundfish Observer Program (Observer Program) and mandatory fishing industry reports. The catch estimation methods are designed to provide a quick turnaround of the information so that NMFS has catch and bycatch estimates as quickly as possible. The system makes maximum use of small amounts of observer data as soon as they are available (at coarser aggregation levels), and the estimates are updated and refined as more data becomes available. There is, however, a greater prevalence of smaller vessels participating in the GOA groundfish fisheries than in the Bering Sea fisheries, particularly catcher vessels less than 60 feet LOA, which are unobserved.

The GOA pollock fisheries are considered high-pulsed fisheries due to the amount of seasonal allocations and the catch rates of the fleet. The seasons usually open only a few days at a time, and NMFS usually announces the closure date of pollock fisheries before the fishery actually opens. High-pulsed fisheries are challenging to manage.

Management of a hard cap under Alternative 2

Alternative 2 would implement Chinook salmon bycatch caps (PSC limits) in the Central and Western GOA pollock fisheries. This action will not incorporate sophisticated management and enforcement protocols such as have been implemented under Amendment 91 in the Bering Sea. Although some modifications will be required to the catch accounting system, simple caps by area are not complicated and will not require a large programming effort. However, PSC estimates change on a regular basis and there can be large variations in the estimates as more observer data becomes available, quality controls are performed, and the observer data are finalized. The fluctuations in the PSC estimates may make it

difficult to manage a hard cap. In order to improve the timeliness and quality of observer data, **NMFS recommends that this action include the requirement for ATLAS software on the CVs and the ability for the observer to transmit their data directly from the vessel's computer with the ATLAS software.** Additionally, in order to improve sorting at the shoreside processors, **NMFS suggests several monitoring provisions to improve the likelihood of a vessel observer obtaining an unbiased count of salmon.** Although this action is specific to GOA Chinook salmon bycatch, identifying salmon to species is difficult unless the observer has the fish in hand. Therefore, each of these provisions includes salmon of all species.

- Require that sufficient assistance is available to help the observer in sorting out salmon of all species from the location where the observer completes their sorting at the shoreside processor or stationary floating processor.
- Require any “after scale” salmon, or salmon found after the observer’s location of sorting at the plant, to be either returned to the vessel observer if the vessel observer is at the shoreside processor or to the plant observer with specific information about where the salmon was found and which vessel it came from.
- Require GOA shoreside processors to track salmon found inside the processing facility back to the specific vessel it came from and record these salmon on the appropriate landing report (or “fish ticket”).

NMFS is not contemplating any changes to observer duties for observers assigned to GOA shoreside processors or stationary floating processors. Plant observers will not be conducting a census of unobserved pollock deliveries, nor collecting genetic samples from salmon of any species for unobserved deliveries because conditions in the GOA pollock fishery do not allow an observer to obtain an unbiased sample.

Current regulations differentiate when retention of salmon is required based on whether an observer is onboard. Detecting salmon as the pollock are brought aboard and stowed is not practical, and is considered generally unsafe due to deck space limitations and stability concerns. **NMFS recommends that as part of this action the regulations are modified to require full retention of all salmon.** It is important to note, however, that regulations for full retention will not modify the observer duties. NMFS will have no way of verifying that full retention of salmon has occurred aboard unobserved vessels.

NMFS will only be able to determine the amount of Chinook salmon PSC being harvested while fishing is occurring if the fishery lasts longer than approximately seven days. However, even in this scenario, a large proportion of the Chinook salmon PSC will be derived from bycatch rates and the PSC estimates will vary and change as more observer data and catch data enters the catch accounting system. As a result, NMFS will have limited options for managing a hard cap. The most likely management strategy will be to allow the pollock fishery to occur, allow time for all the data to enter the CAS so the PSC estimate can be derived, and then determine whether to open subsequent seasons. When deciding about whether to open the subsequent seasons, NMFS will estimate the amount of Chinook salmon likely to be harvested in the season and determine if enough Chinook salmon hard cap remain to support the expected pollock catch. A larger Chinook salmon hard cap will allow NMFS more flexibility in making these decisions. Reopenings will also be affected by this management strategy and the timeliness of processing a reopening may be delayed until observer data has been received from the prior opening to determine total Chinook salmon PSC.

Increased observer coverage under Alternative 2

The majority of the vessels that directed fish for pollock in the Western GOA are less than 60feet LOA and deliver their catch to tender vessels. Few, if any, of the vessels that directed-fish for pollock in the Central GOA fall into the less than 60 feet LOA category. In general, observers are usually able to work

within the existing layout of vessels. Federal regulations require that all vessels requiring observer coverage must pass a USCG Commercial Fishing Vessel Safety Examination prior to an observer boarding the vessel. The dockside examinations are free and provide a thorough vessel check including examination of all safety equipment.

Under observer restructuring, NMFS has developed a method and timeline for preparing vessels less than 60 feet LOA to obtain observer coverage. Under this action, the affected fleet fishes during a relatively short time period and the ports they come into may be remote. Obtaining observer coverage on short notice may be difficult without the structure that will be in place under the restructured observer program. **Additionally, the anticipated timeline to restructure the observer program could be delayed should the Council take action to increase observer coverage in the less than 60 feet LOA fleet prior to restructuring.**

NMFS will continue to estimate PSC using the available observer data, whether it comes from a census at the shoreside processor or is extrapolated from at-sea sampling. For observed deliveries to tender vessels, the PSC estimates will be based on expanded estimates of salmon bycatch from the at-sea samples. With the short timeline for implementation for this action, NMFS is not contemplating changing observer data collection methods on CVs that deliver to tender vessels. Increased observer coverage on the less than 60 feet LOA fleet would result in more trips being observed which may provide increased seasonal coverage in the Western GOA. However, the additional coverage may not increase the precision of PSC estimates since the PSC estimates will be based on at-sea sampling for Chinook salmon which is a relatively uncommon species.

Alternative 3

The primary monitoring and enforcement role for NMFS under this alternative will be to (1) provide a list of the number of eligible LLP licenses that meet the participation standards in each regulatory area to define the threshold number of licenses required for a cooperative to form, and (2) review the annual cooperative applications for the applicable terms and conditions.

For approval of an application, NMFS would require that each cooperative measure be reasonably expected to limit or reduce Chinook salmon bycatch without depriving any participants of a fair fishing opportunity. A second primary means of cooperative oversight would be through the review of annual reports. This review will be required to ensure that under the alternative, NMFS retains final authority over the management of the fishery.

The cooperative provision includes a requirement that vessels retain salmon. The implementation of the requirement that all vessels retain all salmon bycatch will not affect management of the fisheries. Only counts of salmon from observed vessels will be used for management of the fisheries. In addition, it should be noted that in no case will plant observers be required to count salmon or take samples of salmon⁶. On observed vessels, salmon counts and sampling (even those taken at the plant) are administered by vessel observers. On unobserved vessels, any counting or sampling of salmon would be at the discretion of the cooperatives, for example as part of a research endeavor.

Roadmap to the document

The document begins by describing the purpose for this amendment (Section 1) and a description of the alternatives (Section 2). The Regulatory Impact Review begins in Section 3, and provides background

⁶ Although some plant observers may voluntarily assist with unofficial counts of salmon at the plant, those counts are not part of their duties and should not be regarded as officially collected data.

information for the economic analysis, describes how fleet behavior may change as a result of the alternatives, and evaluates the economic and socioeconomic impacts of the action.

Section 4 discusses the environmental impacts of the proposed action and alternatives for the environmental assessment. The management and enforcement considerations for this action are addressed in Section 5.

The document also contains an Initial Regulatory Flexibility Analysis (Section 6), which evaluates the impact of the action on small businesses. Sections 7 and 8 discuss the alternatives with respect to the requirements of the Magnuson-Stevens Act and other analytical considerations.

GOA Chinook Bycatch Presentations at Subsistence Regional Advisory Council (RAC) meetings

Diana Evans gave a 15 minute presentation to each of the two Subsistence RACs listed below. The presentation provided a short background on the Council, and then focused on the Council's current activities with respect to salmon bycatch management in the GOA fisheries. The RACs received a copy of the alternatives identified for the two amendment packages (the first to be expedited, and focusing on the pollock fishery, and the second more comprehensive set of management measures). The presentation focused primarily on the Council's action for the GOA pollock fishery, identifying the alternatives currently under consideration, Chinook bycatch trends in the GOA pollock fisheries in the western and central GOA, the absence of interannual spatial patterns in the location of bycatch, and the limited information available about the stock of origin of Chinook salmon caught in GOA trawl fisheries. The presentation concluded by identifying the Council's current schedule for action, and the opportunities for providing input to the Council decision-making process.

Southcentral Subsistence Regional Advisory Council - March 17, 2011, Anchorage, AK

In addition to the RAC members, there were about 15 people present in the audience, mainly agency personnel from US Fish and Wildlife Service, the National Park Service, Alaska Department of Fish and Game, and the US Forest Service. The RAC as a group did not formally provide a response to the presentation, but individual RAC members asked questions and clarifications, which are generally summarized here. One RAC member noted that the presentation clarified the erroneous perception that the GOA pollock fleet is similar to that of the Bering Sea. It was discussed that there are no catcher processors in the GOA pollock fishery, and many of the pollock vessels support GOA fishing communities.

There was interest in the development of genetic sampling for the GOA, and the status of stock of origin information for Chinook salmon caught as bycatch in the GOA pollock fishery. One member asked about seasonal patterns to the bycatch, and wondered why area closures were not being considered. A RAC member also asked about the salmon donation program, and noted that the average fish size (7.5 pounds) is similar to the size of fish caught in the Southeast Alaska commercial fishery (9 pounds), and could be used for food. RAC members commented on the importance of Chinook salmon, and one explicitly noted that it is vital for a hard cap to be instituted.

Southeast Subsistence Regional Advisory Council - March 23, 2011, Sitka, AK

In addition to the RAC members, there were about 30 people present in the audience. In addition to agency personnel (US Fish and Wildlife Service, the National Park Service, Alaska Department of Fish and Game, US Forest Service, Bureau of Indian Affairs), there were also tribal representatives, conservation NGOs, subsistence users from southeast Alaska, and other individuals. As above, the RAC as a group did not provide a formal response to the presentation, but the Chair noted that the RAC has been very concerned about the return of king salmon, and was supportive of the Council taking action. There were many questions and clarifications by the individual RAC members.

Some questions focused on understanding the uncertainty in the bycatch numbers, and how improvements could be made through electronic monitoring and observer coverage, both on the vessels and at the dock. One members asked how the range of hard caps was arrived at, and whether those thresholds are sufficient. One RAC member wondered whether industry funds the genetic sampling program. Several Council members expressed concern about the impacts of bycatch levels on both salmon fisheries and subsistence activities. One RAC member asked whether there was a rural representative on the Council through with whom they could share there concerns about bycatch levels.

Appendix 3 Weekly GOA Pollock Catch, Estimated Chinook salmon Bycatch, and Chinook salmon Bycatch Rates

NOTE: THE FIRST TABLE (CENTRAL GULF OF ALASKA, 15,000 CHINOOK SALMON CAP) HAS BEEN CORRECTED FROM THE VERSION THAT WAS IN THE INITIAL REVIEW DRAFT.

“Chinook salmon by week” is the estimated Chinook salmon catch by the pollock fleet that week. “Chinook salmon year-to-date” is the total estimated Chinook salmon bycatch for the year, through that week. “Pollock by week” is the weekly catch of pollock. “Pollock year-to-date” is the annual pollock catch through that week. “Chinook salmon per mt of Pollock” is that week’s estimated Chinook salmon bycatch divided by that week’s pollock catch. “Vessels” is the number of vessels that reported activity in the pollock fishery that week. “Processors” is the number of processors that were reported to have taken deliveries from the pollock fishery that week. It should be noted that the processor information was not available to the analyst for the 2010 fishing year, so that information is not included in the tables.

Western Gulf (15,000 Chinook Salmon Cap): Shaded area shows when the cap associated with the smallest cap would be exceeded and a dark vertical line shows when the largest cap would be exceeded

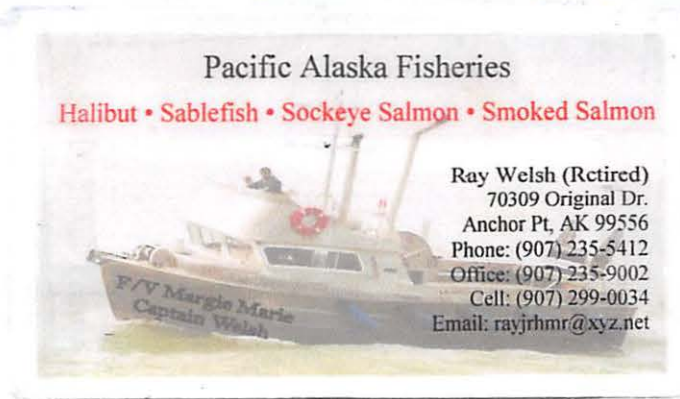
Year	Data	Week (week of the year - based on landings date converted to week ending date reported in the NOAA Catch Accounting Data)																								
		3	4	5	6	7	8	9	10	11	12	13	14	15	16	34	35	36	37	38	39	40	41	42	43	44
2003	Chinook by Week		72																							
	Chinook Year-to-date		72																							
	Pollock by Week		4,174																							
	Pollock Year-to-date		4,174																							
	Chinook per mt Pollock		0.02							0.02	0.02	0.04				0.09	0.09									
	Vessels		27								5	5														
	Processors		3																							
2004	Chinook by Week																									
	Chinook Year-to-date																									
	Pollock by Week																									
	Pollock Year-to-date																									
	Chinook per mt Pollock		0.06							0.12						0.01	0.01	0.00								
	Vessels		20							10						19	16						17	19	14	
	Processors															4	3						4	4	4	
2005	Chinook by Week		234	94																						
	Chinook Year-to-date		234	329																						
	Pollock by Week		5,639	1,672																						
	Pollock Year-to-date		5,639	7,311																						
	Chinook per mt Pollock		0.04	0.06						0.28						0.04	0.05						0.13	0.43	0.41	
	Vessels		22	16						11						20	21						24	24	22	
	Processors		3	3												3	3						4	4	4	
2006	Chinook by Week									120	180															
	Chinook Year-to-date									1,938	2,118															
	Pollock by Week									3,185	4,627															
	Pollock Year-to-date									7,391	12,019															
	Chinook per mt Pollock	0.42	0.45							0.04	0.04					0.03	0.07	0.10	0.09	0.06	0.11	0.17	0.28	0.35	1.14	0.08
	Vessels	22	20							17	18					13	13	11	9	13	10	20	18	10	3	2
	Processors									3	3									3	3	3	3	3		
2007	Chinook by Week																									
	Chinook Year-to-date											1,671														
	Pollock by Week																									
	Pollock Year-to-date												8,670													
	Chinook per mt Pollock	0.14	0.12	0.49						0.01	0.02	0.18				0.04	0.09	0.00	0.17	0.03	0.08	0.08	0.14	0.32	0.36	0.39
	Vessels	20	12	13						4	12	10				8	7			3	4	6	8	9	7	4
	Processors																									
2008	Chinook by Week																									
	Chinook Year-to-date																									
	Pollock by Week																									
	Pollock Year-to-date																									
	Chinook per mt Pollock	0.16								0.31	0.55	0.76	0.64	0.08	0.11	0.01	0.06	0.06				0.10	0.12	0.16		
	Vessels	4								14	4	4	3	6	7		11	10				14	13	11		
	Processors																3						3	3		
2009	Chinook by Week																									
	Chinook Year-to-date																									
	Pollock by Week																									
	Pollock Year-to-date																									
	Chinook per mt Pollock	0.13								0.03	0.04					0.01	0.02					0.04	0.03			
	Vessels	4								15	17					19	11					18	17			
	Processors										3					4							3	3		
2010	Chinook by Week		91	238	409	51	18	143		198	151	35	120	304												
	Chinook Year-to-date		91	329	738	789	807	950		1,148	1,299	1,334	1,454	1,758												
	Pollock by Week		229	714	1,884	813	445	796		1,078	921	209	667	1,965												
	Pollock Year-to-date		229	942	2,826	3,640	4,085	4,881		5,959	6,880	7,089	7,755	9,720												
	Chinook per mt Pollock	0.40	0.33	0.22	0.06	0.04	0.18			0.18	0.16	0.17	0.18	0.15	0.06							0.20	0.19	0.22		
	Vessels	6	8	17	14	8	9			13	9	6	7	16								18	20	17		
	Processors	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#	#

Appendix 3 Weekly GOA Pollock Catch, Estimated Chinook salmon Bycatch, and Chinook salmon Bycatch Rates

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Pacific Alaska Fisheries organized in 1982 as a family business.



From: Captain Ray E. Welsh, III
President & CEO
Pacific Alaska Fisheries

TO: **NORTH PACIFIC FISHERY MANAGEMENT COUNCIL**
203RD Plenary Session / March 30 – April 5, 2011
Hilton Hotel , 500 West 3rd Avenue, Anchorage, Alaska 99501

Session: C-3(b): Initial review of GOA Chinook Salmon By-catch control measures.

Wednesday: March 30th , 2011

Professional vitae: B.S. in Natural Science, Humboldt State University,
Arcata, California 1970

M.S. in Education, Humboldt State University
Arcata, California 1974

Further Graduate Studies in Allied Fields...

Fisheries Background: I was born into a commercial fishing family at Fort Bragg, California [1937]. I worked within our family structure through out my elementary and high school days (mid 1940's through 1955). Commercial fishing is in my DNA .

Session C-3(b); Initial review of GOA Chinook Salmon By-catch control measures.

Captain Ray E. Welsh

Page 1 of 13 pages

Dad & Mom run the Sportsman Dock & Restaurant on Fort Bragg's water front where the Nayo River historically has spawned a world class Chinook salmon industry; Sportsman Dock operations included charter boats, spirit boats, processing , freezing, refrigeration, all of which were part of my work domain.

Continuing my early life's work in fisheries has taken me in crew and mate positions fishing as far south as the Galapagos Islands near the northern boundary of Peru [tuna jig fishing w/live bait].

After serving a military enlistment I spent time in ecological conservation contracting with state and federal governments in river restoration tasks in Northern California.

1969 was my first Alaska visit. During the 1970's I finished my military service and my academic education for the most part. Later, as Captain of my own vessels, I fished 60 footers all the way up the coast from Southeast Alaska, through the various fisheries, into the Bering Sea. I moved my family to Alaska in the early 1980's and continued to raise another generation of Welsh Family fishermen, fishing almost exclusively in halibut, salmon (seining & drift gill netting); sablefish and herring. The 1990's (after the disastrous 1989 PWS oil spill) I did near coastal fishing limit class large boat fishing from Southeast Alaska to north of Kuskokwim River. By 2006 personal health issues forced me to retire to mostly shore duty.

I am vested in this industry. I advocate fishery management with a heavy hand in conservation science. Over the years I have contributed my public input to this council at Seattle, San Francisco, et al. This, then, brings me once again to this Council with its many continuing concerns. I appreciate the opportunity to share and be heard. I shall be brief:

Issues Posed:

1. It seems that the continuing increase in salmon by-catch (2010: 57,000 + 52,000

Fish – Chinooks) leads in a direct path for “monetizing this

by-catch” which is *not* a clear route for conserving the

King stocks. There must be better options, or we need to study the more and find them. Rewarding by-catch *increases* is *not* steeped in successful management examples for any renewable and valuable resource as a viable option for the propagation and conservation of those stocks;

- we need other incremental controls, which may have to
-
- include the possibility, as the final and ultimate ending
-
- in the most dire of extremes, shutting down the whole
-
- fishery, by moratorium, when reasonable measure
-
- enforcement proves itself inadequate.

2. A second issue is that of “100% On-board Fishing Observers” over time – and most especially in “*hot spots and drag-outs*” of the many “geographical sites” well known to the industry.

Special consideration provisions can, and should be made, utilizing these methods for the conservation of the by-catch salmon species.

3. Another tool in the management kit would be a deliberate attempt to build a system utilizing *disincentives* in the process of reaching soft caps on by-catch and after a bit of study and development produce a program which would contribute funds to its operation and restoration of the resource. The basics can be linked to existing organizational models such that it

would not only reduce by-catch, but would have a built-in financial mechanism which would aid the fleet, AND also aid the agency in funding the program. I will share a brief model on page 10 which uses elements from the NOAA Chart on page 9 of this brief.

4. A simplified model will demonstrate the functioning components of this proposed

disincentive model:

A group of five vessels are going to fish a defined district which has been defined by promulgations to also have a 50,000 *by-catch pound limit for this given season*. Hence, it would be fair to put an absolute hard limit of 10,000 pounds on each of the five boats in this *fishing group*.

Observers would have a presence on each of the vessels, all of the time. 70% of assigned by-catch caught would be ^{the} trigger agency oversight, allowing some actions by one boat of the group of five to buy by-catch up to the limit from any other boat who has a surplus. The agency would also enforce promulgated rules for repeat offenders... and one might expect that to happen, intentionally or simple oversight on the part of the specific errant vessel. A fee would govern each District Fish Bank [DFB] transaction [one buy/sell] via the District Fish Bank.

As one might expect, differing by-catch pounds would be caught per each vessel, hence, the soft cap concept. Transfer pounds

to/from the District By-catch Bank would have a fee schedule and the action by the By-catch Bank which would assess fees according to the modest fee schedule...

And the funds would become By-catch Bank earnings which would then be distributed among the program costs as a function within the rules . The "System" would provide stops and fees for violators: applied to owners, operators, and crew relative to the errant vessel. This is *a disincentive!* A concept whose time has come! (see pictogram of the model on page 10)

Table 1. Chinook salmon mortality in BSAI groundfish fisheries.

Year	Annual	Annual	Annual	A season	B season	A season	B season	A season	B season
	with CDQ	without CDQ	CDQ only	With CDQ		Without CDQ		CDQ only	
1991	na	48,880	na	na	na	46,392	2,488	na	na
1992	41,955	na	na	31,419	10,536	na	na	na	na
1993	46,014	na	na	24,688	21,326	na	na	na	na
1994	43,821	40,635	3,186	38,921	4,900	36,699	3,936	2,223	963
1995	23,436	21,430	2,006	18,939	4,497	18,284	3,146	655	1,351
1996	63,205	60,802	2,402	43,316	19,888	42,028	18,774	1,289	1,114
1997	50,530	48,050	2,481	16,401	34,129	14,905	33,144	1,496	985
1998	55,431	50,313	5,118	18,930	36,501	17,991	32,322	939	4,179
1999	14,599	12,937	1,662	8,794	5,805	8,205	4,732	589	1,073
2000	8,223	7,474	749	6,568	1,655	6,138	1,336	430	319
2001	40,547	37,986	2,561	24,871	15,676	23,093	14,893	1,778	783
2002	39,684	37,581	2,103	26,277	13,407	24,859	12,722	1,418	685
2003	53,571	50,858	2,713	40,044	13,527	38,249	12,609	1,795	918
2004	59,967	56,960	3,007	30,717	29,250	29,588	27,372	1,129	1,878
2005	74,267	72,225	2,042	33,636	40,631	32,334	39,891	1,302	740
2006	87,084	85,290	1,794	62,582	24,502	60,974	24,316	1,608	186
2007	129,567	123,914	5,653	77,108	52,459	74,004	49,910	3,104	2,549
2008	24,167	23,450	717	19,045	5,122	18,441	5,009	604	113
2009	14,008	13,505	503	11,075	2,933	10,661	2,844	414	89
2010	12,532	12,197	335	9,513	3,019	9,178	3,019	335	0
2011	2,498	2,344	154	2,498	na	2,344	na	154	na

Table 2. Chinook salmon mortality in BSAI pollock directed fisheries.

Year	Annual	Annual	Annual	A season	B season	A season	B season	A season	B season
	with CDQ	without CDQ	CDQ only	With CDQ		Without CDQ		CDQ only	
1991	na	40,906	na	na	na	38,791	2,114	na	na
1992	35,950	na	na	25,691	10,259	na	na	na	na
1993	38,516	na	na	17,264	21,252	na	na	na	na
1994	33,136	30,593	2,543	28,451	4,686	26,871	3,722	1,580	963
1995	14,984	12,978	2,006	10,579	4,405	9,924	3,053	655	1,351
1996	55,623	53,220	2,402	36,068	19,554	34,780	18,441	1,289	1,114
1997	44,909	42,437	2,472	10,935	33,973	9,449	32,989	1,487	985
1998	51,322	46,205	5,118	15,193	36,130	14,253	31,951	939	4,179
1999	11,978	10,381	1,597	6,352	5,627	5,768	4,614	584	1,013
2000	4,961	4,242	719	3,422	1,539	2,992	1,250	430	289
2001	33,444	30,937	2,507	18,484	14,961	16,711	14,227	1,773	734
2002	34,495	32,402	2,093	21,794	12,701	20,378	12,024	1,416	677
2003	45,586	43,021	2,565	32,609	12,977	30,916	12,105	1,693	872
2004	51,696	48,733	2,963	23,093	28,603	21,964	26,769	1,129	1,834
2005	67,361	65,445	1,916	27,331	40,030	26,032	39,413	1,299	617
2006	82,695	80,954	1,741	58,391	24,305	56,806	24,149	1,585	156
2007	121,757	116,128	5,629	69,408	52,349	66,307	49,821	3,101	2,528
2008	21,535	20,895	640	16,679	4,856	16,075	4,820	604	36
2009	12,424	11,977	447	9,688	2,736	9,330	2,647	358	89
2010	9,737	9,402	335	7,661	2,076	7,326	2,076	335	0
2011	2,462	2,308	154	2,462	na	2,308	na	154	na

Notes: Updated 2/14/11

Non-CDQ data for 1991-2002 from bsahalx.dbf

Non-CDQ data for 2003-2009 from akfish_v_gg_pscnq_estimate

CDQ data for 1992-1997 from bsahalx.dbf

CDQ data for 1998 from boatrate.dbf

CDQ data for 1999-2007 from akfish_v_cdq_catch_report_total_catch

CDQ data for 2008-2009 from akfish_v_gg_pscnq_estimate_cdq

A season - January 1 to June 10

B season - June 11 to December 31

Table 1. Non-chinook salmon mortality in BSAI groundfish fisheries.

Year	Annual	Annual	Annual	A season	B season	A season	B season	A season	B season
	with CDQ	without	CDQ only	With CDQ	Without CDQ	Without CDQ	Without CDQ	CDQ only	CDQ only
1991	na	30,262	na	na	na	3,016	27,246	na	na
1992	na	41,450	na	na	na	2,120	39,329	na	na
1993	na	243,270	na	na	na	1,848	241,422	na	na
1994	94,548	83,384	11,165	5,599	88,949	5,291	78,093	309	10,856
1995	21,875	21,290	585	3,033	18,842	2,903	18,387	130	456
1996	78,060	75,801	2,259	665	77,395	619	75,181	45	2,214
1997	66,994	62,765	4,229	2,710	64,285	2,618	60,148	92	4,137
1998	65,697	64,782	915	4,520	61,177	4,432	60,350	88	827
1999	47,132	46,325	807	393	46,739	378	45,947	15	792
2000	59,327	57,621	1,706	350	58,977	283	57,338	67	1,639
2001	60,731	57,440	3,291	2,903	57,828	2,719	54,721	184	3,107
2002	82,483	78,879	3,604	1,698	80,785	1,677	77,202	21	3,583
2003	191,150	182,748	8,402	4,113	187,037	3,876	178,872	237	8,165
2004	450,553	440,142	10,411	1,028	449,525	998	439,144	30	10,381
2005	709,387	700,979	8,408	1,038	708,348	998	699,980	40	8,368
2006	325,181	323,789	1,392	2,311	322,870	2,245	321,544	66	1,326
2007	97,351	90,171	7,180	9,638	87,713	8,475	81,696	1,163	6,017
2008	16,901	16,376	525	516	16,385	443	15,933	73	452
2009	47,497	46,506	991	163	47,334	163	46,343	0	991
2010	14,965	14,444	521	220	14,745	220	14,224	0	521
2011	8	8	0	8	na	8	na	0	na

Table 2. Non-chinook salmon mortality in BSAI pollock directed fisheries.

Year	Annual	Annual	Annual	A season	B season	A season	B season	A season	B season
	with CDQ	without	CDQ only	With CDQ	Without CDQ	Without CDQ	Without CDQ	CDQ only	CDQ only
1991	na	28,951	na	na	na	2,850	26,101	na	na
1992	na	40,274	na	na	na	1,951	38,324	na	na
1993	na	242,191	na	na	na	1,594	240,597	na	na
1994	92,672	81,508	11,165	3,991	88,681	3,682	77,825	309	10,856
1995	19,264	18,678	585	1,708	17,556	1,578	17,100	130	456
1996	77,236	74,977	2,259	222	77,014	177	74,800	45	2,214
1997	65,988	61,759	4,229	2,083	63,904	1,991	59,767	92	4,137
1998	64,042	63,127	915	4,002	60,040	3,914	59,213	88	827
1999	45,172	44,610	562	362	44,810	349	44,261	13	549
2000	58,571	56,867	1,704	213	58,358	148	56,719	65	1,639
2001	57,007	53,904	3,103	2,386	54,621	2,213	51,691	173	2,930
2002	80,782	77,178	3,604	1,377	79,404	1,356	75,821	21	3,583
2003	189,185	180,783	8,402	3,834	185,351	3,597	177,186	237	8,165
2004	440,459	430,271	10,188	422	440,037	395	429,876	27	10,161
2005	704,586	696,876	7,710	595	703,991	563	696,313	32	7,678
2006	309,644	308,430	1,214	1,326	308,318	1,260	307,170	66	1,148
2007	93,786	87,317	6,469	8,523	85,263	7,368	79,949	1,155	5,314
2008	15,157	14,732	425	319	14,838	246	14,486	73	352
2009	46,129	45,179	950	48	46,081	48	45,131	0	950
2010	13,294	12,777	517	38	13,256	38	12,739	0	517
2011	8	8	0	8	na	8	na	0	na

Notes Updated 2/14/11
 Non-CDQ data for 1991-2002 from bsahalx.dbf
 Non-CDQ data for 2003-2009 from akfish_v_gg_pscnq_estimate
 CDQ data for 1992-1997 from bsahalx.dbf
 CDQ data for 1998 from bostrate.dbf
 CDQ data for 1999-2007 from akfish_v_cdq_catch_report_total_catch
 CDQ data for 2008-2009 from akfish_v_gg_pscnq_estimate_cdq
 A season - January 1 to June 10
 B season - June 11 to December 31

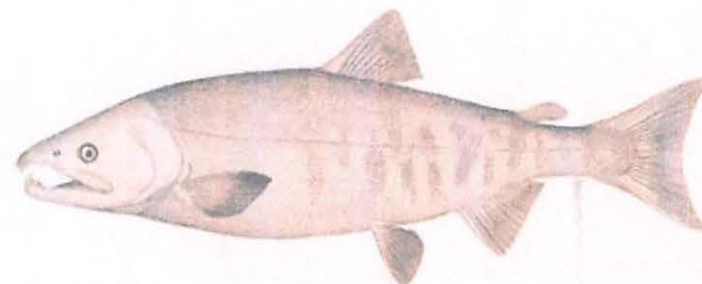
National Marine Fisheries Service, Alaska Regional Office

Session C-3(b): Initial review of GOA Chinook Salmon By-catch control measures.
Captain Ray E. Welsh
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Bering Sea non-Chinook Salmon Bycatch

BERING SEA NON-CHINOOK SALMON BYCATCH MANAGEMENT ANALYSIS

National Marine Fisheries Service (NMFS), in consultation with the North Pacific Fishery Management Council (Council), intends to prepare an analysis of measures to minimize non-Chinook salmon bycatch in the Bering Sea pollock fishery, in accordance with the National Environmental Policy Act of 1969. The analysis will support decision-making for management measures to minimize non-Chinook salmon bycatch in the Bering Sea pollock fishery by analyzing the impacts of the alternatives on the human environment. We are considering new measures to minimize non-Chinook salmon bycatch in the Bering Sea pollock fishery because of the potential negative impacts on salmon stocks in general, and on western Alaska salmon stocks in particular. Four species of salmon (sockeye, coho, pink, and chum) are aggregated into the "non-Chinook salmon" species category. Chum salmon, however, comprises over 99.6% of the total bycatch of this non-Chinook salmon category. We are requesting written comments from the public to determine the issues of concern and the alternatives that should be considered for analysis.



Intercooperative Agreements

[Report to the North Pacific Fishery Management Council on the Bering Sea Pollock Intercooperative Salmon Avoidance Agreement](#), Karl Haflinger, Sea State Inc. - Intercoop Monitor, John Gruver, AFA Catcher Vessel Intercooperative Manager, February 2008

Forms and Applications

[Groundfish/Halibut CDQ and Prohibited Species Quota \(PSQ\) Transfer Request](#)

Supporting Documents

http://www.alaskafisheries.noaa.gov/sustainablefisheries/bycatch/salmon/non_chinook



**Quota Share Use Caps &
Vessel IFQ Caps
2011**

an existing example

Quota Share Use Caps			
	Applicable %	Size of Relevant QSPs	QS Use Cap
Halibut	1% OF HALIBUT 2C QSP	59,979,977 QS units	599,799 QS Units
	.5% OF HALIBUT 2C, 3A, 3B QSP	300,564,647 QS units	1,502,823 QS Units
	1.5% OF ALL HALIBUT AREA 4 QSP	33,002,937 QS units	495,044 QS Units
Sablefish	1% OF SABLEFISH SE QSP	68,848,467 QS Units	688,485 QS Units
	1% OF ALL SABLEFISH QSP	322,972,132 QS Units	3,229,721 QS Units

Note: The "Relevant" QSPs for calculating the Use Caps for both halibut and sablefish are the 1996 QSPs.

Vessel IFQ Caps			
	Vessel Use Cap %	Annual IFQ TAC	Vessel Use Cap
Halibut	1% OF 2C HALIBUT IFQ TAC	2,330,000 net pounds	23,300 net pounds
	.5% OF ALL HALIBUT IFQ TAC	30,382,000 net pounds	151,910 net pounds
Sablefish	1% OF SE SABLEFISH IFQ TAC	6,481,524 round pounds	64,815 round pounds
	1% OF ALL SABLEFISH IFQ TAC	26,794,708 round pounds	267,947 round pounds

Notes:

- Vessel IFQ Caps are calculated on the IFQ TAC only; CDQ TACs are not included in the calculations.
- QSP = Quota Share Pool or Pools; IFQ = Individual Fishing Quota; TAC = Total Allowable Catch.
- Halibut weights are expressed in net (headed and gutted) pounds, and sablefish weights are expressed in round pounds.

Updated: March 7, 2011

Program Administrator
Restricted Access Management
Alaska Region, NMFS

MODELING THE PLAN

Concepts central to By-catch Management

[A] Demonitizing & [B] Disincentives

- A. Many By-catch fish have a greater monetary value than is presently being realized from these stocks - especially Chinook Salmon.
- B. Devise a plan for the use of *incremental disincentive steps* by which to control and diminish the attractiveness of by-catch as presently provided for by the current rules.

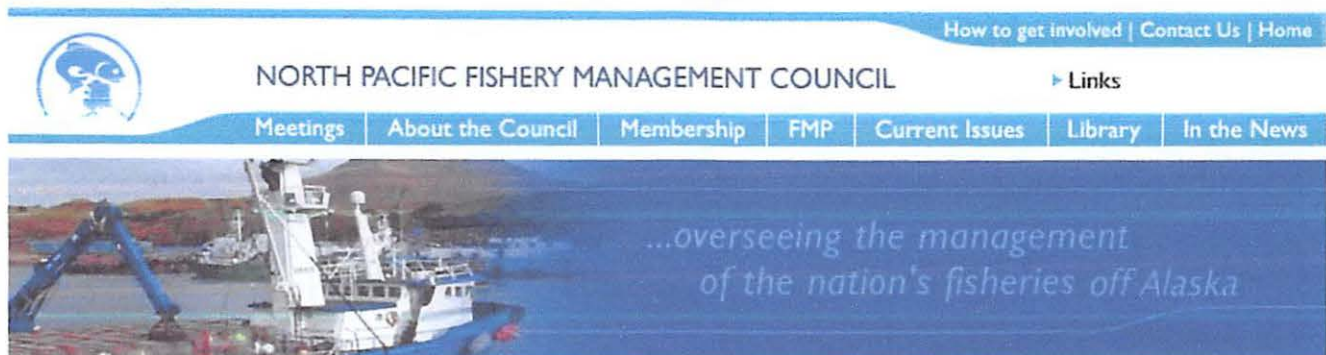
Simplified Demonstration Model

HARD CAP 50,000 UNITS

Catch area to which this model applies is a well-defined area.

*Given: A fishing group of five fishing vessels
An agency "fish clearance bank"*

Operating for the common good of owners, operators, crew, AND the Agency. The OUTCOME would include reducing by-catch & improving restoration of valuable stocks, plus a way to pay some of the program costs.



Meetings

- [March/April Council Meeting March 28 - April 5, Anchorage Hilton](#) [AGENDA](#) (updated 3/25)
[Link to audio while meeting is in session](#)
- [Committee and Related Meetings](#)
- [Council Meetings through 2012](#)
- [Archive of Council meetings; Audio](#)
- [Three Meeting Outlook \(PDF\)](#)

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- [Council Meeting FAQ, Handbook, "Navigating the NPFMC process"](#)
- [Statement of Organization, Practices and Procedures](#) 6/08

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- [Council](#), • [Advisory Panel](#), • [Staff](#)
- [Scientific and Statistical Committee](#)
- [Plan Teams](#)
- [List of committees and membership](#)

Fishery Management Plans

- [BSAI Groundfish](#), • [GOA Groundfish](#)
- [Crab](#), • [Scallop](#), • [Salmon](#) • [Arctic](#)
- [Groundfish Policy Workplan](#)

Current Issues

- [Community Development Quota Program](#)
- [Gulf of Alaska Groundfish Management](#)
 - [Rockfish Pilot Program](#)
 - [PCod Allocations and Fixed Gear Recency](#)
 - [Gulf of Alaska Rationalization archives](#)
- [Observer Program](#)
- [Halibut](#)
[Charter Halibut Stakeholder Committee Info](#)
- [Bycatch Reduction](#)
[Salmon bycatch avoidance and IRIU](#)
- [Essential Fish Habitat \(EFH\) \(HAPC\) \(BSHC\)](#)
- [Protected Resources \(Including SSL\)](#)
- [Non-Target Species Management](#)
- [Crab Rationalization](#)
[BSAI Crab Committee Information](#)
- [Ecosystem Management](#)
[Northern Bering Sea Research Area](#)
- [BSAI Pacific Cod Allocations](#)
- [Arctic Fishery Management](#)
- [Annual Catch Limits](#)

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In the News

Items FOR the April meeting:

- [GOA Chinook bycatch](#)
- [IPHC PSC discussion paper; OAC Report, 3/11](#)
- [Review of the Salmon FMP; Hired Skipper Analysis; Crab Data Analysis; EA and EFP for Salmon Excluder Device](#)
- [PIBKC Rebuilding; EA, RIR](#)
- [GOA Pcod jig EA](#)
- [Rockfish Coop reports: CGOA, FCA](#)
- [Salmon FMP](#)
- [GOA and BSAI Specs 2011-2012](#)
- [National SSC Workshop report](#)

Search our site and NOAA Fisheries

<http://alaskafisheries.noaa.gov/npfmc/>

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Session C-3(b); Initial review of GOA Chinook Salmon By-catch control measures.
Captain Ray E. Welsh
Page 11 of 13 pages

Pete Weiden

**CITY OF HOMER
HOMER, ALASKA**

Hogan

RESOLUTION 11-033

A RESOLUTION OF THE CITY COUNCIL OF HOMER, ALASKA, URGING THE NORTH PACIFIC FISHERY MANAGEMENT COUNCIL TO ADOPT MEASURES THAT REDUCE THE CHINOOK SALMON PROHIBITED SPECIES CATCH IN THE GULF OF ALASKA COMMERCIAL TRAWL FISHERIES.

WHEREAS, The Kenai Peninsula Borough on March 1, 2011 passed Resolution 2011-019, "A RESOLUTION URGING THE NORTH PACIFIC FISHERIES MANAGEMENT COUNCIL TO ADOPT MEASURES THAT REDUCE THE CHINOOK SALMON PROHIBITED SPECIES CATCH IN THE GULF OF ALASKA COMMERCIAL TRAWL FISHERIES"; and

WHEREAS, The City of Homer concurs and supports the Borough's action; and

WHEREAS, The North Pacific Fishery Management Council is empowered with the authority and has the responsibility to ensure sustainable fish populations in the waters off Alaska; and

WHEREAS, Salmon of all varieties play a key role in the economy of the Kenai Peninsula Borough; and the City of Homer in particular; and

WHEREAS, Sport fishing guides and charters, commercial set netters and drift fishers, and personal use and subsistence fishers all suffer adverse impacts from poor Chinook salmon stocks; and

WHEREAS, Salmon bycatch measures have not yet been implemented in the Gulf of Alaska (GOA) groundfish fisheries; and

WHEREAS, The Chinook salmon is critically important to the Kenai Peninsula economies; and

WHEREAS, The Chinook salmon is an integral part of the Cook Inlet eco-system; and

WHEREAS, The Chinook salmon Prohibited Species Catch (PSC) in the GOA ground fish trawl fisheries during 2010 was over 54,000 fish and has reached unacceptable levels; and

WHEREAS, A PSC limit of 15,000 fish is being considered under Component 1 in Alternative 2 of the Final Council Motion C-3(b) GOA Chinook Salmon Bycatch; and

WHEREAS, Many agencies and organizations are dedicated to the health and survival of the Chinook salmon, the official state fish of Alaska.

NOW, THEREFORE, BE IT RESOLVED that the City of Homer, Alaska does:

SECTION 1. Urge the North Pacific Fishery Management Council to adopt and implement management measures to provide immediate incentives for the GOA Pollock fleet to reduce Chinook salmon PSC.

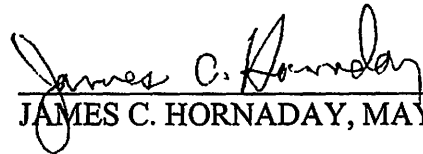
SECTION 2. That this resolution requests that any measures adopted include the hard cap limit of 15,000 fish per year.

SECTION 3. That copies of this Resolution be provided to Governor Sean Parnell and all members of the North Pacific Fishery Management Council.

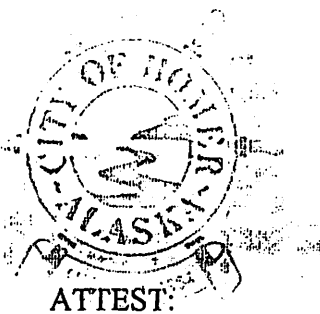
SECTION 4. That this Resolution takes effect immediately upon adoption.

PASSED AND ADOPTED by the Homer City Council this 29th day of March, 2011.

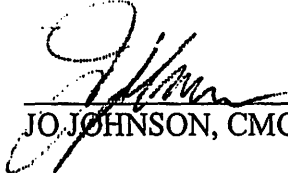
CITY OF HOMER



JAMES C. HORNADAY, MAYOR



ATTEST:



JO JOHNSON, CMC, CITY CLERK

SOUTH K BEACH INDEPENDENT

FISHERMEN'S ASSOCIATION

P.O. Box 1632 Kenai, Alaska 99611-1632 (907) 283-5098
Protecting and Preserving the Kasilof River Aquarian System

April 1, 2011

North Pacific Fishery Management Council
Eric Olson, Chair
605 West 4th, Suite 306
Anchorage, Alaska 99501-2252

Chairman Olson,

Support: Alternative two with a precautionary hardcap of 15,000 Chinook

We appreciate the expedited process the Council is undertaking to insure proper conservation measures are in place. Chinook salmon are an important species to the people of Alaska. It has been reported that 75,000 may be harvested in a given year from the waters of Cook Inlet alone.

Some interesting points that leads to the serious concerns of Alaskans is that from 1995 – 2010 through the analysis of GOA CWT's, 33 % of the Chinooks originated from Alaskan waters (page 110, March 2011 review). Considering that only 50% of the hatchery originated Kings from Cook Inlet are implanted with wire tags, and that wild stocks are not accessed, considerable numbers of the PSC Chinook are caught within the central and western Gulf; the Pollack groundfisheries bycatch are most likely adversely affecting the local near shore communities.

Some other interesting points:

5.2.8.1 Coded Wire Tag information for ESA-listed Chinook salmon stocks

Not all fish caught in the BSAI fisheries would have been expected to survive to return to spawn because of subsequent natural mortality had they not been caught in the fishery. The parameter used to characterize the expected mortality of immature fish is referred to as the adult equivalency rate; this represents the proportion of the fish caught that would be expected to return to spawn absent further fishing. The adult equivalency rate is age specific - about 60% for age-3 fish, and about 85% for age-4 fish (pers. Com. Dell Simmons, Pacific Salmon Treaty, Chinook Technical Committee co-chair, December 12, 2006). The CWT information indicates that half the fish caught in the BSAI fishery are roughly age 3 and half are roughly age 4. So for example, if we estimate that 10 listed fish were caught in the fishery in a given year, the effect on subsequent spawning would be a reduction of 6 to 8 spawning adults depending on the age composition of the fish caught.

5.1 Overview of Chinook salmon biology and distribution

Like all species of Pacific salmon, Chinook salmon are anadromous. They hatch in fresh water, spend part of their life in the ocean, and then spawn in fresh water. All Chinooks die after spawning. Chinook salmon may become sexually mature from their second through seventh year, and as a result, fish in any spawning run may vary greatly in size. For example, a mature 3-year-old will probably weigh less than 4 pounds, while a mature 7-year-old may exceed 50 pounds. Females tend to be older than males at maturity. In many spawning runs, males outnumber females in all but the 6- and 7-year age groups. Small Chinooks that mature after spending only one winter in the ocean are commonly referred to as "jacks" and are usually males. Alaska streams normally receive a single run of Chinook salmon in the period from May through July.

Bering Sea Chinook Salmon Bycatch 245
Final EIS – December 2009

We remain concerned that adequate genetic analysis is not being expedited in the same manner as the council rule making process. It is our understanding that additional observers will not be on hand until maybe the middle of 2012. Without additional observers, an acceptable sampling program cannot occur and the decision making process by the Council will be further hindered due to a lack of scientifically defensible data.

We continue to encourage the Council and the state of Alaska to work in unison to develop and implement a system that will incorporate the best available science to determine the origins of this fully utilized salmon resource.

We believe other measures can also be considered to expedite the process;

- Adequate numbers of observers could be just a matter of training and certifying processor personnel at shore based plants or tendering operations.
- Full retention of salmon should be a requirement.
- Possible closures or area restrictions, at the very least, restrictions in the summer months (C&D) seasons when the Chinooks are mostly present.

It is our ardent hope that the NMFS will co-ordinate the effort to both minimize the bycatch of ESA Chinooks and continue to streamline the observer program to meet the needs of the resource reliant Alaskan communities.

Thank you,

Paul A. Shadura II
SOKI

Stakeholders of the Salmon Resource in the Gulf of Alaska

March, 2011

Mr. Eric Olson, Chair
North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, AK 99510

Governor Sean Parnell
P.O. Box 11001
Juneau, AK 99811

RE: Agenda Item C-3(b) Gulf of Alaska Chinook Salmon Bycatch

Dear Chairman Olson and Governor Parnell,

We, the undersigned, urge the North Pacific Fishery Management Council to continue to expedite measures to reduce Chinook salmon bycatch in Gulf of Alaska pollock trawl fisheries.

In 2010, the incidence of observed Chinook bycatch in the directed fishery reached unprecedented levels which were unacceptably high. To date there are no control measures to reduce Chinook bycatch. This results in a lack of incentive for the trawl fleet to alter their behavior to reduce this waste.

We favor a Prohibited Species Catch (PSC) limit of 15,000 Chinook salmon for the Gulf of Alaska. This amount represents a reasonable cap which will provide immediate incentive to reduce Chinook salmon bycatch. We also recommend a mandatory cooperative, which will provide the responsible fleet mechanisms to achieve the goal. We support expanded observer coverage for trawl vessels which currently carry no observers to provide additional data necessary to base sound management decisions.

The salmon resource in the Gulf of Alaska is an important part of what defines our community and economy. This level of bycatch is unacceptable and puts undue hardship on Alaska commercial, sport, recreational, personal use, and subsistence harvesters.

Thank you,

Nancy Hillstrand

	First Name	Last Name	Address	City	State	ZIP	Fisheries Interest		
1	Wes	Arnold	13615 Jessica Lane	Houston	TX	77069	Consumer		
2	Martha	Barnett	11052 Ugak Drive	Kodiak	AK	99615	Sport fishing		
3	Betsy	Beardsley	3507 North Point Drive	Anchorage	AK	99502	Lifelong Alaskan raised in a fishing family		
4	David	Beebe	PO Box 148	Petersburg	AK	99833	Owner/operator F/V Jerry O		
5	Stanley	Beebe	1775 Oceanaire Court	San Luis Obispo	CA	93405	Nushagak set net		
6	William	Bergeron III	5151 Park Avenue	Fairfield	CT	6825	Sport fisherman		
7	William	Bergeron Jr	19036 Mountain Point Circle	Eagle River	AK	99577	Recreational fisherman		
8	William	Botieff Jr	17593 Powers Creek Loop Road	Silverton	OR	97381	Sport fisherman		
9	Jeffrey	Burleson	2924 Silverplume Drive	Fort Collins	CO	80526	Charter customer		
10	Charles	Carlson	7680 Meadow Lane	Eden Prairie	MN	55346	Tourist, sportfishing		
11	John	Clutter	PO Box 2787	Chignik	AK	99564	Aleutian Express Inc		
12	Tom	Collopy	41067 Heather Street	Homer	AK	99603	Consumer		
13	Jai	Crapella	1201 2nd Street	Douglas	AK	99824	Consumer, owner of tourism business		
14	Charles	Deal	590 Waddell Street	Homer	AK	99603	Recreational fisherman		
15	Switgard	Duesterloh	PO Box 2787	Kodiak	AK	99615	Fisheries Biologist		
16	Bryan	Ellsworth	1948 Marmot Drive	Kodiak	AK	99615	Daylight Harbor Inc		
17	Tim	Erion	PO Box 526	Clam Gulch	AK	99568	Charter owner/operator		
18	Sarah	Evans	PO Box 841	Dillingham	AK	99576	Subsistence, sport, and fisheries biologist		
19	Anthony	Florentine	626 N Mountain View Place	Fullerton	CA	92831	Consumer		
20	Constance	Fredenberg	12322 Biscane Drive	Palmer	AK	99645	Consumer		
21	William	Fullerton	2947 Lakeview Drive	Kodiak	AK	99615	Air transporter of sport/commercial fishermen		
22	Karen	Gauthier	505 Gauthier Way	Dillingham	AK	99576	Peter Pan, Phoenix, Cap'n Slack		
23	Maleom	Gaylord	PO Box 1483	Homer	AK	99603	Consumer		
24	Allison	Gaylord	PO Box 1483	Homer	AK	99603	Consumer		
25	David	Goggia	2915 Clipper Circle	Kenai	AK	99611	Kenai River Professional Guide Association Inc		
26	Jacquelyn	Hartwig	37249 211th Ave	Le Center	MN	55344	Sport fisherman		
27	Diane	Hirshberg	3813 Hampton Drive	Anchorage	AK	99504	Consumer		
28	David	Howard	3124 Ishpeming Trl	Traverse City	MI	49686	Other		
29	Jennifer	Jeffrey Bell	33420 Vinewood	Seward	AK	99664	Personal fishing		
30	Bruce	Jolma	460 NE Alder Street	Clatskanie	OR	97016	F/V Venture		
31	Timothy	June	6.5 Mile Mud Bay Road	Haines	AK	99827	Marine business owner		
32	Bob	Kimbrough	11003 East 30th Ave	Spokane Valley	WA	99206	Consumer		
33	Maureen	Knutsen	PO Box 134	Naknek	AK	99633	Subsistence and commercial		
34	Zach	LaPerriere	2212 Sawmill Creek Road	Sitka	AK	99835	Contractor to and friend of the fleet		
35	Palmer	Lie	21727 96th Ave W	Edmonds	WA	98020	F/V Marie Jensen - Bristol Bay Driftnet		
36	Duncan	MacDonald	1132 River Bend Drive	La Belle	FL	33935	Fisherman		
37	Stephanie	Megggers	PO Box 93590	Anchorage	AK	99509	Recreational, fisheries biologist		
38	John	Murray	224 Observatory Street	Sitka	AK	99835	Troller owner/operator		
39	Kenneth	Newman	1424 Mission Road	Kodiak	AK	99615	Charter owner/operator		
40	Cheryl	Ostor	4938 Clover Lane	Homer	AK	99603	Consumer		
41	Colleen	Rankin	Box KPR Port William	Kodiak	AK	99697	Lodge owner		
42	Alvin	Rhiner	2649 Elyssee Street	San Diego	CA	92123	Fisherman		

43	Steven	Rogers	531 Ridge Road	Mountain Home	AR	72653	Sport fisherman		
44	Dennis	Rogers	413 Sandy Beach Road	Petersburg	AK	99833	Research and charter vessel owner, previous fishing vessel		
45	Paddy	Santucci	6215 Rebel Way	Fairbanks	AK	99709	Subsistence		
46	Will	Schlein	304 W Pioneer Ave	Homer	AK	99603	Consumer		
47	Michael	Sharp	PO Box 3221	Homer	AK	99603	Consumer		
48	Bob	Shavelson	PO Box 3269	Homer	AK	99603	Consumer		
49	Hal	Shepard	PO Box 15332	Fritz Creek	AK	99603	Consumer		
50	Amy	Snider	3724 Campbell Airstrip Road	Anchorage	AK	99504	Subsistence		
51	Carin	Stephans	PO Box 162	Homer	AK	99603	Consumer		
52	Ronald	Thompson	500 Dog Salmon Road	Kodiak	AK	99615	Commercial Fisherman		
53	Everett	Thompson	PO Box 151	Naknek	AK	99633	Subsistence, commercial, AK Native, boat captain		
54	Ben	Tucker	PO Box 15284	Fritz Creek	AK	99603	Consumer		
55	Perri	Whisenhunt	13974 Phoenix Drive	Tyler	TX	75707	Consumer		
56	Christoper	White	953 Janish Drive	Sandpoint	ID	83864	Bristol Bay fisherman		
57	Shelley	Woods	750 17th Ave Apt 4	Fairbanks	AK	99701	Subsistence		
58	Mary Ann	Yourth	315 Barrow #306	Anchorage	AK	99501	Consumer		

TRAWLER FLEET TAKING HEAVY TOLL ON KINGS EMERGENCY ACTION SOUGHT

NATALIE PHILLIPS Daily News reporter Staff

So far this year about 64,000 king salmon have been killed by Bering Sea and Gulf of Alaska trawlers more than double the number discarded by the trawlers in 1990 prompting a call for emergency action. "Those numbers are absolutely unacceptable," said Rick Lauber, chairman of the North Pacific Fisheries Management Council, which regulates the trawler industry. "No one is going to argue that point. I can't say what we are going to do about it, but I know if there is something we can do legally this year, we will." The council meets again the week of April 21 in Kodiak. "We all knew this was coming and I am furious that nobody ever did anything," said Clem Tillion, a member of the council and a special fisheries assistant for Gov. Wally Hickel. "We are going to raise hell. This is the fourth year they have been hammered." The Alaska Factory Trawlers Association was at a loss to explain the big increase. "This just came up last week," said Bert Larkins, executive director of the group. "We certainly are scratching our heads. I sure can't give you any reason." State and National Marine Fisheries Service biologists couldn't explain the jump either. Because some of the dead fish were tagged, scientists could trace their origins to rivers across the Pacific Northwest. One fish was from the Upper Snake River in Idaho, Tillion said. Others were from waterways in Washington, Oregon, California and Alaska. Tagged fish from Halibut Cove and the Crooked Creek Hatchery, both in Cook Inlet, were found, but no fish from the Susitna or Kenai river systems were recovered because "they weren't tagged," Tillion said. "Somewhere, somebody is not going to catch as many fish," said NMFS Regional Director Steve Pennoyer, who ultimately decides if emergency action is necessary. "The numbers are fairly high when compared to last year, but they are not higher than past years."

Emergency actions could include shutting down the trawlers or curtailing their fishing. That may be premature, Pennoyer said, until the reports filed by observers are analyzed or the cause of the increase pinpointed, he said. Even without emergency action, the council is expected to adopt regulations for the 1992 season that would cap king salmon killed by trawlers, but the sports fishermen want the slaughter stopped now. "This has been going on for years," said Tom Elias, president of the Alaska Sport Fishing Association. "There has been a drop in the production of king salmon. There are just less coming back every year because the giant trawler fleets are getting more efficient and more effective. These numbers just confirm our suspicions." Last year, the Kenai River was closed to all but catch-and-release fishing the last four days in July because sonar readings showed that the target number of 19,000 spawning salmon was 500 short, according to Loren Flag, executive director of the Kenai Peninsula Fishermen's Association, which represents setnet fishermen. About 10,000 of those mature, spawning salmon up to 60 pounds and more were caught by sport and setnet fishermen last summer, he added.

"Only 500 more fish and we would not have had to close the river, we would not have had the fall out we had and the large numbers of cancellations in the guide industry," Flag said. The trawlers which inadvertently scoop up halibut and salmon in their quest for bottom fish such as pollock use huge nets on or near the bottom of the sea. Regulations require fishermen to throw the salmon and halibut back in the sea because they would glut the fish market if sold. Few survive. Limits have been set on how many halibut they can destroy, but there is no such limit for salmon. The bycatch numbers for salmon began high in the Bering Sea with the start of the trawler season in January. By early April, about 29,000 salmon most weighing 6 to 8 pounds had been thrown overboard. By mid-March, the trawlers reached their limits for bottomfish and halibut and began migrating to the Gulf of Alaska to join other trawlers there. About the same time, the bycatch number for salmon in the gulf skyrocketed. Preliminary figures show that by early April an estimated 35,000 salmon, mostly weighing 12 pounds, had been killed in the gulf. State biologists are still awaiting some of the observers reports, but made projections based on current patterns. This is only the second year regulations have required full-time observers on large trawlers. But regulators have bycatch figures dating back to 1977, when most of the trawlers were operated by foreign and joint ventures, and observer numbers were not systematically kept. The record high of 114,790 king salmon killed as bycatch was reported in 1980 for the Bering Sea. Four years later, an estimated 74,360 salmon were reported thrown overboard in the Gulf of Alaska. King salmon have a lifespan of up to seven years, so rivers may just now be feeling the impact of the 1984 deaths. In 1976, the Magnuson Fishery Conservation and Management Act gave control of those waters within 200 miles of the coastline to the United States, pushing foreign and joint-venture fisheries offshore.

Before the act, bycatch numbers were "markedly higher," said Dave Carlile, a state Fish and Game Department biometrician.

"But don't get me wrong. The department feels these (current) numbers are cause for concern."

The concern has also reached Juneau. A resolution has passed in the Senate and will be considered by the House next week that calls for both emergency action and regulations for the 1992 trawler season that would save more king salmon.

TONS OF KINGS WASTED, BUT WHO'S COUNTING? LACK OF DATA OR ORGANIZED PROTEST LETS TRAWLERS' HUGE BYCATCH OF SALMON GO ALMOST UNCHECKED

NATALIEPHILLIPS

Daily News reporter

Staff

Alaska setnetters, driftnetters, trollers and sport fishermen spent the past decade battling among themselves over a few hundred king salmon here and there and fretting over foreign fleets fishing in the high seas off the Alaska coast. Meanwhile, closer to shore, large trawlers went about scooping up and inadvertently killing tens of thousands of king salmon from as far away as Idaho's Snake River and California's Sacramento River and as close to home as Ship Creek, according to National Marine Fisheries Service records dating to the late 1970s.

The trawlers killed at least 800,000 king salmon ranging in size from 14 to 35 inches and weighing from a little over a pound to 39 pounds, a sample of the tagged fish showed. So far this year, the number of kings killed by trawlers is estimated at 64,000, more than double the number reported killed in all of 1990.

Yet in the mid-1980s, when fishing regulators moved to stop the bottom-fish trawlers from inadvertently killing large numbers of halibut and crab with their huge sweeping nets, nothing was done about the king, the rod-and-reel angler's prized catch.

Why has the trawlers' take of kings gone virtually unchecked?

Some say because there is no conclusive data to prove the trawlers have taken a toll on their total numbers. Others say it is because salmon fishermen were too busy bickering to organize as did the halibut fishermen, who managed to get the North Pacific Fisheries Management Council to set quotas on how many fish could be killed as bycatch by the trawlers.

"I've been in there flailing away about this since the mid-1980s," said Henry Mitchell, executive director of the Bering Sea Fishermen's Association and a council member. "You can't blame the council; they respond to pressure and there were just bigger things on their agenda." "The council has had so much on its plate," said Clarence Pautzke, executive director for the council, which helps regulate fishing in the 200-mile zone off of Alaska's coasts. "There just have been other things more pressing. The salmon people just haven't banged the drum loud enough." "Everything has its time," Mitchell said. The trawlers vs. king salmon time has come.

The council meets this week in Kodiak. On Thursday it is scheduled to consider a request for emergency action to protect the salmon populations by halting trawling in the eastern Gulf of Alaska. And the council will begin work that could produce regulations for king salmon bycatch as early as January 1992. And even though the American Factory Trawlers Association concedes a problem exists, the council must move slowly because any action it takes could end up being challenged in court, Pautzke said.

There is a problem, Bruce Buls, a spokesman for the association, said Thursday at a meeting of the Resource Development Council for Alaska. But "it is probably just a few boats."

A solution may be to set bycatch quotas for individual boats, rather than establishing a bycatch total and then shutting down all trawlers when the quota is met, he said, which is the way bycatch halibut is regulated.

The technology and know-how already exist for reducing the salmon bycatch, said Clem Tillion, Gov. Wally Hickel's special assistant for fisheries. "The incentive to use it is not there."

So many variables influence king salmon runs that it is risky business blaming one fishery, said Katherine Myers, a University of Washington fish biologist who has studied king salmon bycatch by the bottom fisheries.

"It is all speculative," she said. But "if this large bycatch doesn't turn out just to be indicative of a really large run of fish, there is going to be a really large problem." By using observers, the study of fish scales and information gathered from tagging, state and federal fish biologists have produced a number of studies suggesting how many kings are being killed off Alaska shores and where they come from.

The studies have been sporadic, so no consistent data exists. But a common thread in all of them is that thousands of fish are killed annually by the trawlers. Most of the kings killed in the Bering Sea appear to be western and southcentral Alaska fish. On the other side of the Aleutian chain, in the Gulf of Alaska, the king kill includes many fish from the Pacific Northwest.

In the late 1970s and early 1980s, observers aboard Japanese trawlers fishing close to Alaskan shores kept track of the number of king salmon scooped up by the trawlers and tossed overboard. The trawlers must throw the salmon back because they might be targeted, rather than rock fish and pollock, if they could be kept.

When those numbers crept up over 100,000 in 1980, the council gave the foreign fleets five years to get the bycatch down to 14,000, Mitchell said. For fear of being chased out of the waters, they wasted no time. The first year, the foreign trawlers hit the target simply by fishing differently, including slowing their boats so their nets would not be as wide open.

About the same time, inland fishermen were focused on a huge, Japanese mother ship, fishing the high seas of the Bering beyond the 200-mile limit controlled by the council. The mother ship reported a record-high bycatch of at least 703,798 king salmon. Inshore fishermen were irate. "If just 100,000 of those would have made it back," Mitchell said, "they would have translated into 2 million pounds of additional king salmon. At \$2 a pound, that would have been \$4 million for the commercial catch alone."

While that was going on, the domestic trawlers were beginning to take over the fisheries inside the 200-mile zone, as mandated by the 1976 Magnuson Fishery Conservation and Management Act. They didn't have observers aboard because "the American fleet kept saying, 'We need room to grow.' They said, 'Don't put regulations on us,'" Pautzke said. "So the council sort of kept hands off for quite a while."

Meanwhile, restraints were placed on the inland fishermen, with the latest being a plan to limit the number of guides working on the Kenai River. For the past two years, fishermen competing for Kenai River salmon have faced dwindling numbers of returning fish. State figures show that 48,123 salmon returned to the Kenai River to spawn in 1987 and sport fishermen caught more than 12,000 of them. Last year, only 24,000 kings returned to spawn, and just over 6,000 were caught by sport fishermen.

Last year, a system was put into place that requires observers on the domestic trawling fleets. Some fish biologists say with only two years of data, it is too early to say how the trawlers are affecting salmon returns. Others, like Tom Elias, president of the Alaska Sport Fishing Association, say, "How much more data do you need? That's just the trawlers giving the same old line so they can buy more time."

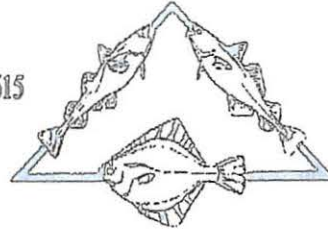
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Groundfish Data Bank

Alaska

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Julie Bonney, Executive Director jbonney@gei.net
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NPFMC Agenda Item C-3(b): GOA Chinook Bycatch

April 1, 2011

Review of GOA Chinook bycatch rates and pollock quotas with projections for 2011-2013, Central and Western Gulf:

Pollock TAC 2011 – 2013: 2011 and 2012 TAC's from Council specs with 2013 TAC projections by Area using GOA 2010 SAFE Table 1.21 author recommended F (139,371 mt) and 2011 area proportions (640 TAC at 3,388 mt, SE/EYAK TAC at 9,245 mt).

Year	620	630	Total CG	WGOA	Total
2011	37,365	20,235	57,600	27,031	84,631
2012	48,293	26,155	74,448	34,932	109,380
2013	55,952	30,303	86,256	40,478	126,733

PSC Rates: Range of potential Chinook PSC rates for each proposed GOA cap using above pollock quotas and both maximum and minimum regional allocations (analysis Table 16, page 14) – CGOA and WGOA:

CGOA

15,000	22,500	30,000	
9,122	13,682	18,243	low cap
0.158	0.238	0.317	2011 TAC
0.123	0.184	0.245	2012 TAC
0.106	0.159	0.211	2013 TAC
11,612	17,418	23,224	high cap
0.202	0.302	0.403	2011 TAC
0.156	0.234	0.312	2012 TAC
0.135	0.202	0.269	2013 TAC

WGOA

15,000	22,500	30,000	
3,388	5,082	6,776	low cap
0.125	0.188	0.251	2011 TAC
0.097	0.145	0.194	2012 TAC
0.084	0.126	0.167	2013 TAC
5,878	8,818	11,757	high cap
0.217	0.326	0.435	2011 TAC
0.168	0.252	0.337	2012 TAC
0.145	0.218	0.290	2013 TAC

PSC rates by Area w/ projections for 2011-13 (adapted from Table 4, page 21 of the analysis):
 2003 – 2010 rates from Table 4, 2011 – 2013 projected rates from above tables.

Central GOA:

Year	no. Chinook/mt Pollock							
	15,000 CAP		22,500 CAP		30,000 CAP			
	Max Alloc	Min Alloc	Max Alloc	Min Alloc	Max Alloc	Min Alloc		
2003	0.11	0.11	0.11	0.11	0.11	0.11	Historical	
2004	0.28	0.28	0.28	0.28	0.28	0.28		
2005	0.46	0.46	0.46	0.46	0.46	0.46		
2006	0.26	0.26	0.26	0.26	0.26	0.26		
2007	0.98	0.98	0.98	0.98	0.98	0.98		
2008	0.26	0.26	0.26	0.26	0.26	0.26		
2009	0.09	0.09	0.09	0.09	0.09	0.09		
2010	0.28	0.28	0.28	0.28	0.28	0.28		
2011	0.20	0.16	0.30	0.24	0.40	0.32		Projected
2012	0.16	0.12	0.23	0.18	0.31	0.25		
2013	0.13	0.11	0.20	0.16	0.27	0.21		

Western GOA:

Year	no. Chinook/mt Pollock							
	15,000 CAP		22,500 CAP		30,000 CAP			
	Max Alloc	Min Alloc	Max Alloc	Min Alloc	Max Alloc	Min Alloc		
2003	0.05	0.05	0.05	0.05	0.05	0.05	Historical	
2004	0.10	0.10	0.10	0.10	0.10	0.10		
2005	0.19	0.19	0.19	0.19	0.19	0.19		
2006	0.19	0.19	0.19	0.19	0.19	0.19		
2007	0.19	0.19	0.19	0.19	0.19	0.19		
2008	0.14	0.14	0.14	0.14	0.14	0.14		
2009	0.03	0.03	0.03	0.03	0.03	0.03		
2010	1.23	1.23	1.23	1.23	1.23	1.23		
2011	0.22	0.13	0.33	0.19	0.43	0.25		Projected
2012	0.17	0.10	0.25	0.15	0.34	0.19		
2013	0.15	0.08	0.22	0.13	0.29	0.17		



WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

NEWS RELEASE

600 Capitol Way North, Olympia, WA 98501-1091

March 01, 2011

Contact: Pat Pattillo, (360) 902-2705

Strong runs of Columbia River chinook, Puget Sound coho and pink salmon projected

OLYMPIA - Fishing prospects look bright this year for chinook in Washington's ocean waters and the Columbia River, according to pre-season salmon forecasts released today at a public meeting in Olympia.

Opportunities for anglers also look good in Puget Sound, where coho and pink salmon runs are expected to be strong this year.

Forecasts for chinook, coho, sockeye, pink and chum salmon mark the starting point for developing 2011 salmon-fishing seasons in Puget Sound, the Columbia River and Washington coastal areas. The forecasts were developed by the Washington Department of Fish and Wildlife (WDFW) and treaty Indian tribes.

Fishery managers have scheduled a series of public meetings over the next few weeks to discuss potential fishing opportunities before finalizing seasons in mid-April.

A meeting schedule, salmon forecasts and information about the salmon season-setting process are available on WDFW's website at <http://wdfw.wa.gov/fishing/northfalcon/>.

Phil Anderson, WDFW director, said department staff will work closely with tribal co-managers and constituents to develop fisheries that meet conservation objectives and provide fishing opportunities on abundant runs of wild and hatchery fish.

"We will continue to design fishing seasons that not only meet conservation goals for salmon, but also minimize impacts to other species," said Anderson. "It is important that we take into account the entire ecosystem when managing our fisheries."

Anderson noted that state budget reductions are also a factor in designing fisheries that can be managed effectively with a reduced staff. State general-fund support for WDFW was reduced by 30 percent in the current budget and is expected to drop even further over the next two years.

As in past years, salmon-fishing prospects in 2011 vary by area:

- **Columbia River:** About 760,000 fall chinook are expected to return to the Columbia River this season. That's about 112,000 more chinook than last year's return and would constitute the fifth largest run since 1948, said Cindy LeFleur, Columbia River policy coordinator for WDFW.

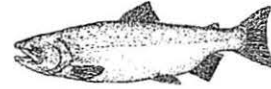
More than half of the chinook forecast - about 398,000 salmon - is expected to be "upriver brights" headed to the Hanford Reach area and the Snake River. That would be the second largest run of upriver brights since 1964, when fishery managers began keeping records, said LeFleur.

"This should be a good year for upriver brights, which provide some of the best in-river fishing opportunities for anglers," LeFleur said.

**ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE**



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Time: 11:30 a.m.

2011 COMMERCIAL TROLL CHINOOK SALMON QUOTA

Sitka. The Alaska Department of Fish and Game announced today that under management provisions of the Pacific Salmon Treaty (PST), the 2011 Southeast Alaska abundance index (AI) has been calculated to be 1.69, which results in an all-gear harvest quota of 294,800 treaty Chinook salmon. This abundance-based quota represents an increase of approximately 73,000 fish when compared with last year's preseason estimate of the all-gear quota of 221,800 fish at an AI of 1.35. This results in a commercial troll fishery preseason Chinook salmon harvest allocation of 218,060 fish for 2011, an increase of 54,178 fish when compared with last year's troll allocation.

The all-gear Chinook salmon quota is allocated among commercial and sport fisheries according to management plans established by the Alaska Board of Fisheries [5 AAC 29.060(b) and 47.055]. Most Chinook salmon produced from Alaska hatcheries are not factored into the AI and may be harvested in addition to the treaty limit.

The allocations to fisheries for 2011 under the management plan are as follows:

2011 Treaty Chinook Salmon Allocations	Number of Chinook Salmon
All-gear treaty quota	294,800
Purse seine (4.3% of all-gear)	12,676
Drift gillnet (2.9% of all-gear)	8,549
Set gillnet (1,000)	1,000
Troll (80% after net gear subtracted)	218,060
Sport (20% after net gear subtracted)	54,515

The summer troll quota is calculated by subtracting the winter and spring fishery treaty Chinook salmon harvest from the annual troll allocation. However, because the final harvest numbers for non-Alaska hatchery fish (treaty fish) in the winter and spring fisheries will not be known until late June, fishing time for the summer season will not be set until just prior to the first summer season Chinook salmon opening on July 1.

C-3(b) GOA Chinook salmon bycatch, motion
April 2, 2011

The Council adopts the preliminary preferred alternative (PPA) and changes to alternatives and options described below. The Council requests staff revise the analysis and address SSC minutes, as practicable, and release the document for public review and final action in June. Additions to the February 2010 Council motion are shown underlined and deletions are shown in strikethrough. Options that comprise the PPA are in bold.

Problem statement:

Magnuson-Stevens Act National Standards require balancing optimum yield with minimizing bycatch and minimizing adverse impacts to fishery dependent communities. Chinook salmon bycatch taken incidentally in GOA pollock fisheries is a concern, historically accounting for the greatest proportion of Chinook salmon taken in GOA groundfish fisheries. Salmon bycatch control measures have not yet been implemented in the GOA, and 2010 Chinook salmon bycatch levels in the area were unacceptably high. Limited information on the origin of Chinook salmon in the GOA indicates that stocks of Asian, Alaska, British Columbia, and lower-48 origin are present, including ESA-listed stocks.

The Council is considering ~~several~~ management tools for the GOA pollock fishery, including a hard cap ~~and cooperative approaches~~ with improved monitoring and sampling opportunities to achieve Chinook salmon prohibited species catch (PSC) reductions. Management measures are necessary to provide immediate incentive for the GOA pollock fleet to be responsive to the Council's objective to reduce Chinook salmon PSC.

Alternatives:

Alternative 1: Status quo.

Alternative 2: Chinook salmon PSC limit and increased monitoring.

Component 1: PSC limit: 15,000, 22,500, or 30,000 Chinook salmon PSC limit.

Option: The PSC limit may be exceeded by up to 25 percent one out of three consecutive years. If the PSC limit is exceeded in one year, it may not be exceeded for the next two consecutive years.

Apportion limit between Central and Western GOA

- a) proportional to the historical pollock TAC (2006-2010 or **2001-2010 average**).
- b) proportional to historical average bycatch number of Chinook salmon (2006-2010 or **2001-2010 average**).

Option: drop 2007 and 2010 from both regulatory time series.

- c) **as a combination of options (a) and (b) at a ratio of a:b equal to**
 - Suboption i: 25:75
 - Suboption ii: **50:50**
 - Suboption iii: 75:25

Central and Western GOA PSC limits and the 25 percent buffer would be managed by area (measures to prevent or respond to an overage would be applied at the area level, not Gulfwide). A 25 percent buffer would not apply in the first year of the program if a PSC limit is implemented midyear.

Chinook salmon PSC limits shall be managed by NMFS in-season similar to halibut PSC limits.

~~If a Chinook salmon PSC limit is implemented midyear in the year of implementation, an amount should be deducted from the annual PSC limit in that year. The deduction should be equal to the contribution that would have been made based on historical averages (selected above) in the seasons preceding implementation.~~

If it is not possible to implement a Chinook salmon PSC limit in the first year for the full calendar year, it shall be implemented midyear for C and D seasons. The PSC limits under this scenario for C and D seasons, combined, will be as follows:

Central GOA: 7,710 Chinook salmon
Western GOA: 5,598 Chinook salmon

Component 2: ~~Expanded observer coverage:~~ Improved Chinook salmon PSC estimates:

Extend existing 30% observer coverage requirements for vessels 60'-125' to trawl vessels less than 60' directed fishing for pollock in the Central or Western GOA.

Require full retention of all salmon in pollock trawl fisheries.

NMFS shall work with the processors to evaluate and address the quality of sorting at the plants to assist improvements in observer salmon estimates. The Council encourages NMFS to apply lessons learned from the BSAI to the GOA where applicable.

Processing plants, with assistance from NMFS, should endeavor to ensure their fish tickets accurately reflect the species and number of salmon, which will be delivered and sorted as salmon bycatch at their facilities.

NMFS is also encouraged to collaborate with industry to facilitate information sharing in order to speed delivery of in-season data (total catch and salmon counts, by species) for the NORPAC data system and Catch Accounting System.

~~Alternative 3: Mandatory salmon bycatch control cooperative membership.~~

~~The requirement for salmon PSC to be discarded at sea would not apply to directed GOA pollock fishing.~~

C-3(b) Motion Attachment

Preliminary preferred alternative Chinook salmon annual PSC limit:

Central GOA: 15,816

Western GOA: 6,684

Preliminary preferred alternative for a Chinook salmon PSC limit for a midyear implementation:

The preliminary preferred alternative (PPA) PSC limits for the first year under a midyear implementation are the result of the PPA annual PSC level in each area multiplied by the average bycatch taken in the C and D seasons within each area across the years noted in the PPA and adjusted upward by 25 percent.

According to Table 50 on page 76, the average level of bycatch 2001-2010, drop 2007 and 2010, for the C and D seasons was 39 percent in the Central GOA and 67 percent in the Western GOA.

Midyear PSC limit calculation:

Central GOA: $(15,816 \times 0.39) \times 1.25 = 7,710$

Western GOA: $(6,684 \times 0.67) \times 1.25 = 5,598$