


MEMORANDUM

TO: Council, SSC and AP Members

FROM: Clarence G. Pautzke 
Executive Director

DATE: June 7, 1996

SUBJECT: Allocations of Pacific cod in the BSAI

| |
|----------------|
| ESTIMATED TIME |
| 12 HOURS |

ACTION REQUIRED

Final Decision on a preferred alternative.

BACKGROUND

Amendment 24, adopted by the Council in 1993, and implemented for the years 1994, 1995, and 1996, allocates the BSAI Pacific cod TAC between trawl gear (54%), fixed gear (44%), and jig gear (2%). Because this amendment sunsets at the end of this year, the Council initiated an analysis of a new plan amendment to continue these allocations with potential changes in the percentages allocated to trawl gear and fixed gear (jig gear would remain at 2%). The amendment also includes a potential further split of the trawl gear apportionment between catcher vessels and catcher/processor vessels. More specifically, the following alternatives were identified:

| Alternatives Under Consideration | | | |
|----------------------------------|--|-------|-----|
| Alternative | Trawl | Fixed | Jig |
| 1 | No Action-Current allocation will expire at the end of 1996. | | |
| 2 | 54% | 44% | 2% |
| 3 | 44% | 54% | 2% |
| 4 | 59% | 39% | 2% |
| 5 | 39% | 59% | 2% |
| 6 | 49% | 49% | 2% |

Under each of the main alternatives listed above, the Council is also considering splitting the trawl portion of the TAC between catcher vessels and catcher processors. The splits being contemplated are 60% CV / 40% CP, 40/60, and 45/55 (the three year average).

A draft EA/RIR/IRFA for public review was made available to the public on May 10, 1996. This document was considerably different than the document presented to the Council at the April meeting and takes into account comments and concerns of the Council, the SSC, and the AP. The Executive Summary of the document is included as Item C-3(a).

At the April meeting the Council, at the request of industry, formed a committee consisting of seven representatives of the longline, pot, and trawl sectors, and tasked them with negotiating an agreement which was acceptable to all parties involved. This committee members are shown below:

| | |
|---------------------|--------------|
| Mothership Trawler | Bob Desautel |
| Shoreside Trawler | Fred Yeck |
| Pot Gear | Gordon Blue |
| Ice Longliner | John Bruce |
| Freezer Longliner | Thorn Smith |
| Factory Trawler | Sam Hjelle |
| Shoreside Processor | John Iani |

Dave Hanson served as the facilitator.

The Committee met on May 23-24, and agreed upon an acceptable allocation of the BSAI Pacific Cod TAC. The terms of the negotiated agreement are included as Item C-3(b). The negotiated allocation agreement would allocate 51% of the BSAI Pacific cod to the fixed gear sector and 47% to the trawl sector, with the remaining 2% allocated as in the past to the jig gear. The trawl sector, in a separate negotiation, agreed to split their apportionment 50/50, between catcher processors and catcher vessels. Other provisions of the agreement would set the maximum amounts of halibut which could be apportioned to the Pacific cod fisheries for trawl sector (1,600 mt) and to the longline gear (900 mt), and stipulate that any unused portion of the jig fishery would be reallocated to the fixed gear sector only. The agreement also asks that the Council review the Pacific cod fisheries after four years following the date of implementation, but the allocation would not sunset if no action were taken by the Council. A brief analysis of the negotiated agreement is included as Item C-3(c).

Item C-3(d) contains correspondence received on this issue.

EXECUTIVE SUMMARY

The Council selected a range of alternatives to be considered when allocating Pacific cod between fixed, trawl, and jig gear. This allocation will replace BSAI Amendment 24 which allocates 54% of the Pacific cod TAC to trawl gear, 44% to fixed gear (hook and line and pots), and 2% to jig, but will sunset on December 31, 1996. Alternatives under consideration by the Council are:

| Alternative | Trawl | Fixed | Jig |
|-------------|--|-------|-----|
| 1 | No Action-Current allocation will expire at the end of 1996. | | |
| 2 | 54% | 44% | 2% |
| 3 | 44% | 54% | 2% |
| 4 | 59% | 39% | 2% |
| 5 | 39% | 59% | 2% |
| 6 | 49% | 49% | 2% |

Under each of the main alternatives listed above, the Council is also considering splitting the trawl portion of the TAC between catcher vessels and catcher processors. The splits being contemplated are 60% CV / 40% CP, 40/60, and 45/55.

Environmental Impacts

Chapter 2 concluded that none of the alternatives under consideration is likely to significantly affect the quality of the human environment. It was also determined that none of the alternatives is likely to have any adverse impact on endangered or threatened species or on marine mammals.

Review of 1992-95 Fisheries

Chapter 3 provided a summary of the 1992-95 Pacific cod fisheries. Some of the important findings from that chapter are:

- * The trawl halibut mortality cap caused a redistribution of the TAC from trawl vessels to fixed gear in both 1994 and 1995.
- * In 1995, fixed gear vessels were unable to harvest all of the 10,000 mt reallocation from trawl vessels, because they reached their halibut mortality cap.
- * Pot vessels increased their total catch from about 8,000 mt in 1994 to 18,700 mt in 1995. Preliminary catch reports for 1996 indicated about a 50% increase over 1995 rates.
- * Trawl catcher vessels averaged 25.7 kg of halibut mortality per metric ton of Pacific cod target catch, and catcher processors averaged 19.1 kg/mt in 1995.
- * Halibut mortality rates and crab bycatch rates tended to be quite variable across years.

- * Discards of cod are highest in the non-cod target fisheries. This is especially true for the trawl catcher processor fleet. Overall in 1995, 17.68% of cod taken was discarded. That same year, 51.39% of the cod taken in non-cod targets (as bycatch), and 6.03% of the cod taken in cod target fisheries was discarded.
- * Trawl catcher vessels tend to catch a higher percentage of their total cod in the cod target fishery than catcher processors.
- * Fixed gear vessels had little cod bycatch in non-cod target fisheries.
- * Pot vessels had higher bycatch rates of *C. opilio* and red king crab than any of the other gear groups (though mortality rates are uncertain).
- * Cod fillets are mainly sold in the U.S. Roe, milt, salt cod, and whole cod are exported. H&G cod have important markets in Asia, Europe, and North America. These different markets suggest that ignoring benefits beyond primary processing tends to introduce a bias that favors the freezer longliners.

Analytical Methodologies

Chapter 4 provides a description of the model used to project total catches under each of the Council's alternatives. The present model no longer uses gross revenue as the "maximand" - it *calculates* gross revenues for each alternative but is not *driven* by gross revenues. It also incorporates a set ratio of CV catch rates to CP catch rates within the trawl sector, which further reduces its reliance on gross revenue and makes its operation consistent with actual fisheries observations. Total cod catches in other groundfish fisheries (other than midwater pollock) are fixed, which provides an estimate of bycatch needs of cod by these fisheries, therefore enabling reasonable estimates of cod remaining for target fisheries. Essentially, this model is a deterministic model - it is a convenient tool for calculating a variety of necessary mathematical equations, utilizing a necessary minimum of assumptions regarding the prosecution of the fisheries.

Analytical Findings

Major findings from Chapter 5 of the analysis are summarized next. Model Run #1 contains the most relevant basic findings. This model run represents the best estimate of how the current fisheries are managed and prosecuted. Other model runs are provided to show the effects of sensitivity analyses or the effects of various sets of assumptions such as CDQ allocations, splitting the trawl halibut PSC apportionment between catcher vessels and catcher/processors, and the Improved Retention and Utilization initiative.

Findings from model #1 (Base Case Results):

- * Because pot vessels do not have a cap on PSC halibut mortality, fixed gear overall will not be constrained by existing halibut PSC caps.
- * Within the fixed gear group, the longline target fishery is constrained by their halibut PSC caps under every Alternative at 94,112 mt as estimated by the model. Therefore, the alternatives will have little impact on the longline fleet, unless some change in the halibut PSC caps is made.
- * Trawl gears are constrained by PSC caps in any alternative which allocates 49% or greater to that sector, but are constrained by the Pacific cod apportionment in alternatives which allocate less than 49%. Because they are constrained by halibut under the current program (Alternative 2), and by any alternative

which increases the trawl apportionment, the trawl sector would not realize gains in Pacific cod catch under any of the alternatives under consideration, unless changes are made to the PSC caps.

- * The primary beneficiary of an increase in the fixed gear allocation will be pot vessels - this is because longline gear is constrained by the current PSC cap.
- * Pacific cod catches in other trawl groundfish target fisheries are stable at around 53,000 mt under each alternative. This represents between 40% and 50% of the total trawl catch under any of the alternatives. Under current regulations Pacific cod in catches in other trawl groundfish fisheries will be largely unimpacted by the apportionments.
- * Trawl catcher processor catches of Pacific cod in other groundfish fisheries are likely to be about 35,000 mt under each alternative. Pacific cod catches in other groundfish fisheries by trawl catcher vessels are approximately 18,000 mt. Neither of the fixed gears have significant bycatch of Pacific cod in other groundfish fisheries.
- * Discards are estimated to decrease with increases in allocations to the fixed gear sector, assuming current management regulations, though no major differences occur across alternatives. Approximately 75% of all Pacific cod discards occur in trawl fisheries for targets other than Pacific cod. These discards will be largely unaffected by the allocation.
- * Total halibut bycatch mortality from the cod fisheries decreases in allocations favoring fixed gear. Within the trawl sector, halibut mortality is reduced in allocations favoring catcher processors.
- * Crab bycatch generally increases under alternatives which allocate a higher percentage to fixed gear. This is because cod trawl target fisheries have generally lower crab bycatch rates than pot gear fisheries for cod (other trawl groundfish targets take the vast majority of crab bycatch). This finding does not take into account differential mortality rates associated with each gear type.
- * Total product from the cod fisheries is greatest under Alternative 7, where fixed gear receives the highest allocation percentage. This is due to higher utilization rates (production of whole and H&G product as opposed to fillets, for example).
- * The total amount of cod going to domestic markets will likely remain unchanged, assuming current halibut PSC caps. This is because any change in the apportionment appears to affect only trawl and pot gear, which produce similar products for the same markets.
- * Gross revenue per ton of target catch is greatest for trawl catcher processors. However, because much of their catch of Pacific cod occurs in other groundfish fisheries, overall gross revenue impacts of the alternatives are relatively small. The difference between the alternative with highest gross revenue estimate and that with lowest is \$4.6 million dollars, approximately 2.5% of overall gross revenues in the Pacific cod target fisheries of all gears.
- * Gross revenue estimates assume that the pot fleet will be able to harvest the Pacific cod made available to it by the apportionments. If the pot fleet is unable to catch their share, and the other sectors are constrained by either halibut or by the Pacific cod apportionment, then gross revenue will fall from the projected amounts by \$833 for each ton "left on the table." If for example 1,000 mt of Pacific cod are left unharvested, then overall gross revenues will be \$833,000 less than projected. If 5,500 mt are left unharvested then overall gross revenues will fall by \$4.6 million which was the total range seen in the alternatives, under the assumption that all Pacific cod would be caught.

- * Gross revenue measures ignore costs of production and do not necessarily reflect the greatest net return to the Nation. Reliable cost information is unavailable, but as discussed in Chapter 3 would tend to indicate that net revenue is higher in trawl fisheries than in pot fisheries. Since pot fisheries are the primary beneficiary of a reallocation to fixed gears it would appear that net revenue decreases would be likely, under this scenario.
- * Opportunity costs as represented by reduced gross revenue amounts generally decrease with increases in the fixed gear allocation. This finding is heavily influenced by the reduced gross revenue impacts which would be felt by the groundfish fisheries themselves, rather than in impacts on the halibut fishery, or on the crab fisheries. There is a direct (albeit partial) tradeoff between revenues in the Pacific cod trawl target fisheries and revenues in the pollock fisheries. In alternatives which increase revenues for the trawl Pacific cod fisheries, revenues are reduced (i.e., reduced gross revenues are higher) in the pollock fisheries.

General Assessment of the Alternatives Under Model Run #1 (Base Case):

Alternatives 1, 2, and 4 and Sub Options:

- * Under these alternatives, which keep the apportionment at the current levels or increase the apportionment to the trawl sector, the trawl fleet is constrained by their catch of halibut rather than by the Pacific cod apportionment. Therefore, little or no change from the current situation can be expected, for either sector. Under the 'C' sub-options of these alternatives target catches are expected to shift from the Trawl CP to the Trawl CV sector. Because trawl catcher vessels appear to have a higher halibut PSC mortality rate, overall trawl catches decrease under the 'C' options, which allocate 40% to Trawl Catcher Processors and 60% to Trawl Catcher Vessels.

Alternative 3 and Sub-Options:

- * Under Alternative 3 which reverses the current apportionment allocating 44% to the trawl sector and 54% to the fixed gears, the pot fleet is expected to have over 51,000 mt available to it, assuming the longline fleet will be constrained by their halibut PSC catch. This is an increase of 33,000 mt from their 1995 catch.
- * Under 3A (no CP/CV split), the ratio of catch between the CP and CV groups is projected to be the same as under the current allocation. Overall trawl target catches decrease by 10,673 mt., and halibut PSC mortality drop with it to 1,447 mt, 238 mt less than the current trawl halibut PSC mortality cap. Under options B and D more Trawl CP target catches increase and halibut PSC mortality drops to a low of 1426 mt under option 3B. Under option 3C Trawl CV target catches increase, and halibut PSC mortality is projected to be 1,573 mt.

Alternative 5 and Sub Options:

- * Under all options of Alternative 5 which allocates 59% of the Pacific cod to fixed gears, projected catches by the pot fleet are over 65,000 mt. This exceeds their 1995 catch by approximately 46,000 mt. Since the longline fleet is constrained by their halibut PSC mortality cap, capacity in the pot fleet will have to increase in order to harvest the entire Pacific cod TAC, if it stays at current levels.
- * Target fishing for Pacific cod by catcher processors is estimated to fall to very low levels (6,000 mt) under Alternative 5C. This Alternative allocates 39% of the Pacific cod to the trawl sector, with 60% of that going to catcher vessels. Under this alternative, target catches of the trawl catcher vessels are

projected to be higher than under the current apportionment. Under other Sub-Options target catches are much more evenly distributed between the Trawl CV and Trawl CP groups.

Alternative 6 and Sub-Options:

- * Under Alternative 6, which is a 49/49 split between trawl and fixed gear, the pot fleet is projected to have between 39,896 mt (under 6B) and 45,936 mt (under 6C) available to it. This is an increase of over 20,000 mt from their 1995 catch.
- * Under Alternative 6, the total trawl target catch (an average of 48% under the four options) is just below the level which can be taken by their cod apportionment. The trawl target catch is still constrained by their overall trawl halibut PSC mortality cap, but with a small decrease in their bycatch rates, they would instead be constrained by the cod apportionment. Total trawl catches are highest under option 6B, 48.4% of the TAC, and lowest under option 6C at 46.1% of the TAC.

Model Run #2 and #3 - Sensitivity Analysis Which Changes ($\pm 10\%$) the Ratio of CV to CP Catch Rates

- * Increasing the ratio of trawl CP to CV target catch increases the target catch going to trawl catcher processor under each alternative. With increased CP target catch, more trawl Pacific cod is caught per ton of halibut, and therefore, the overall trawl total catch will tend to increase. Decreasing this ratio will result in an opposite directional effect.

Model Run #4 - Sensitivity Analysis Which Uses 1994 (as opposed to 1995) Halibut Bycatch Rates

This model run simply uses the 1994 halibut bycatch mortality rates for each fishery, as opposed to the 1995 rates used in the "Base Case." Because PSC caps are an important constraint on the fisheries (other than pot gear), the results under each alternative are significantly influenced by halibut bycatch mortality rates. In this case, because the mortality rate for longline gear was 50% higher than in 1995, the resulting catch of cod by this sector is reduced by about 50%. Additional catch is accrued to the pot gear sector. Trawl mortality rates were higher also, but only slightly so. If the reverse occurs (halibut bycatch mortality rates decrease for longline and/or trawl gear), then the amount of cod catch available for the pot gear sector would be decreased.

Model Run #5 - Assumes a Pro-rata Apportionment of the Trawl Halibut PSC Cap Between Catcher Vessels (CV) and Catcher Processors (CP)

- * The findings under this scenario are similar to the "Base Case," with the following notable exceptions:
- * Splitting the trawl PSC cap favors catcher processors (CP) under the current percentage split, its reciprocal, or a 49/49 split - this sector gains cod harvest from the CV sector which reaches its PSC cap relatively sooner.
- * A split PSC cap is neutral under alternatives which significantly increase the fixed gear allocation, because TAC will be the constraining factor anyway.
- * Splitting the PSC cap proportional to the cod quota reduces overall halibut mortality, relative to having a common cap for the two trawl sectors. This results because under the current apportionment the catcher vessels take 51% of the trawl target catch but account for 58% of the total trawl halibut PSC mortality catch in the Pacific cod fisheries. If the catcher vessel were to catch 60% of the target cod they would end up with 68% of the halibut mortality. Therefore if they receive only 60% of the halibut, they

will not be able to catch 60% of the cod, and the total halibut mortality will decrease, but only if the catcher processors have low enough halibut bycatch rates to first use their cod allocation.

- * These results are primarily due to two factors: (1) the catcher vessels have a higher percentage of their cod catch in cod target fisheries, and (2) the catcher vessels have a higher bycatch rate of halibut, in cod targets, than catcher/processors.

Model Run #6 - Assumes a 7.5% TAC Reduction for CDQs

- * This model run was made with the assumption of 7.5% of the TACs, including cod, being set aside as CDQs. Essentially, this reduction in TAC, because it is accompanied by a 7.5% reduction in the halibut PSC caps for each fishery, does not alter the basic outcomes other than to proportionally reduce the catch and gross revenues for the longline and trawl sectors. Pot gear, unconstrained by PSC caps, would continue to harvest any of the 'excess' quota (above 49%) allocated to fixed gear.

Model Runs #7 and #8 - Release the Halibut PSC Constraints for Longline and Trawl Gear and Sets the Pot Gear Catch at a Maximum of 25,000 mt and 35,000 mt Respectively

- * The primary purpose of these model runs is to examine what would be required, in terms of halibut PSC allowances, by each sector under the full range of allocation alternatives.
- * Because longline gear no longer has a cap in this model run, pot gear catch was arbitrarily constrained at 25,000 mt in order to make the model work (i.e., tell us how much halibut might be needed by the other sectors to prosecute their quota allocations). This is a 33% increase over the 1995 catch by pot gear.
- * In order to catch the full cod quota under the current allocation, an additional 376 mt of halibut mortality would be required. Of the total amount needed (2,861 mt) to fully take the cod TAC, 797 mt would be for the longline sector (just below their actual cap of 800 mt) with 2,050 mt by trawl gear (365 mt over their actual cap of 1,685 mt) and pot gear would account for 14 mt. If the trawl allocation is split 60% to the catcher vessel sector, the total increase would be only 516 mt (with the trawl CV sector accounting for 1,759 mt).
- * Under a reciprocal of the current split (allocating 54% to fixed gear), and assuming a 25,000 mt catch by pot vessels, the longline sector would need a total of 1,027 mt of PSC, 227 mt over their existing cap. The trawl sector would be constrained by the cod quota in this case and would take 1,447 mt, 238 mt short of their existing cap, for a net 'savings' of 11 mt.
- * Under a 49/49 split, the longline sector would need 912 mt of total halibut PSC, and the trawl sector (assuming no sub-split) would need a total of 1,749 mt of PSC to cover cod catch in directed (target) cod fisheries. This is, as in Alternative 2, above the existing caps.
- * Under the most extreme allocation alternative which would reduce overall PSC mortality (Alternative 5 which allocates 59% to fixed gear), the total potential halibut 'savings' would be 197 mt, which is the total savings from the trawl sector minus the additional halibut needed for the longline sector.
- * A final model run was performed which raises the pot gear sector's cod catch to 35,000 mt, which is double their 1995 catch. In this case, the total PSC needed by the trawl and longline sectors decreases. The lowest amount of potential halibut bycatch in this case is 2,222 mt (again from Alternative 5), for an overall potential 'savings' of 282 mt.

- * Potential 'savings' of halibut from the trawl sector can be reapportioned to other trawl groundfish fisheries during the annual specifications process (thereby negating the 'savings'), or allowed to be reapportioned to the directed halibut fisheries, or 'banked' to enhance future halibut biomass (the latter two options are at the discretion of the IPHC). A change in the overall caps for longline or trawl fisheries would require a separate FMP/regulatory amendment.

Model Runs #9 and #10 - Evaluates Interaction With IR/IU Program and Assumes a 10% Decrease in the Catch of Cod in Other Groundfish Fisheries (25% reduction assumed in #10)

- * This model run was made to examine potential interactions with the Council's proposed Improved Retention and Utilization (IR/IU) program. Obvious impacts are that discards would be reduced to zero (other than regulatory discards). Less obvious impacts are derived by making an assumption regarding the avoidance of cod bycatch in other groundfish target fisheries. Two scenarios are developed: (1) assumes that bycatch of cod in other fisheries will decrease by 10%, and (2) assumes that bycatch of cod in other fisheries will decrease by 25%.
- * The primary impact is to make more cod available to all target fisheries, of which gains accrue primarily to the trawl fisheries since fixed gear fisheries take nearly all of their cod in targets anyway.
- * Under the assumption of a 25% decrease in cod caught in other fisheries, Alternative 3A (which is a flip of the current percentage splits) shows an increase in the target catch of cod for both the CV and CP trawl sectors (about 5,000 mt each), so that their total target catch is equal to the target catch under the current allocation percentage; i.e., the percentage allocations could be reversed and the target catch of cod by trawlers would remain unchanged relative to Alternative 2. [This comparison is assuming the IR/IU program is in place - the total target catch would be lower than Alternative 2 without IR/IU in place, so would represent a decrease in catch for trawlers in at least 1997.]

Overall Findings

- * Given the current halibut bycatch rates in the trawl fishery, the current allocation of Pacific cod (Alternative 2: 54% to trawls and 44% to fixed gear) could not be harvested without an inseason reallocation from the trawl sector to the fixed gear sector of at least 12,000 mt.
- * Under a 49%/49% allocation between fixed and trawl gear (Alternative 6), both fixed and trawl Pacific cod catch could be accommodated within the existing halibut PSC caps without inseason reallocation.
- * Due to bycatch constraints on both longline and trawl gear, the primary beneficiary of any increase in the fixed gear allocation above 49% will be pot gear. To the extent pot gear is unable to take the additional allocation, there will be foregone harvest of Pacific cod.
- * If an increase is made to the trawl gear sector, then foregone harvest of Pacific cod would be expected as they are constrained by halibut bycatch, unless some halibut is reapportioned from other target trawl fisheries in the annual specifications process. They are currently constrained at about 49% of the TAC. If it were re-appportioned in the fall to fixed gear, pot gear may or may not be able to take that 'excess' fish, depending on the size of the unused quota and the amount of pot gear effort exerted.
- * Overall halibut mortality and overall cod discards tend to decrease under Alternatives favoring fixed gear.

- * Within the trawl fleet, the CV trawl sector has higher halibut bycatch mortality rates, while the CP sector has higher cod discard rates.
- * Reduction in the trawl gear allocation will tend to be at the expense of the trawl cod target fisheries, since bycatch needs in other fisheries will still be accommodated. Since the CV sector targets cod at a relatively higher rate, they will be most impacted, barring sub-allocations between the two trawl sectors.
- * Based on available information for this analysis, differences between the alternatives, in terms of total gross revenues, will not be significant. Primary impacts will be distributional; i.e., the different allocations will create benefits for the pot sector at the expense of the trawl sector. The trawl sector is unable to benefit from increases in the trawl apportionment due to the halibut mortality cap.
- * All findings in the document should be made, bearing in mind the assumptions and caveats of the analysis. In particular, we remind the readers the 1995 bycatch rates are an important determinant of the results. These rates have varied widely over the years included in the analysis, and are expected to continue to vary. Finally, we remind the reader that gross revenues ignore all costs of production and may be misleading as a predictor of overall benefits to the Nation.

Specific Issues in the Council's Problem Statement

Although much of the proceeding summary touched on specific items in the Council's Problem Statement, an additional summary is provided in this section which explicitly refers to issues raised in that Problem Statement - the Problem Statement is shown again below for reference:

The Bering Sea/Aleutian Islands Pacific cod fishery continues to manifest many of the problems that led the NPFMC to adopt Amendment 24 in 1993. These problems include compressed fishing seasons, periods of high bycatch, waste of resource, and new entrants competing for the resource due to crossovers allowed under the NPFMC's Moratorium Program. Since the apportionment of BSAI cod TAC between fixed gear, jig, and trawl gear was implemented on January 1, 1994, when Amendment 24 went into effect, the trawl, jig, and fixed gear components have harvested the TAC with demonstrably differing levels of PSC mortality, discards, and bycatch of non-target species. Management measures are needed to ensure that the cod TAC is harvested in a manner which reduces discards in the target fisheries, reduces PSC mortality, reduces non-target bycatch of cod and other groundfish species, takes into account the social and economic aspects of variable allocations and addresses impacts of the fishery on habitat. In addition, the amendment will continue to promote stability in the fishery as the NPFMC continues on the path towards comprehensive rationalization.

The following specific issues are identified and discussed below:

Compressed Fishing Seasons

Fishing seasons for each industry sector involved were discussed in some detail in Chapter 3. None of the alternatives being considered will directly address the issue of compressed fishing seasons overall, though there are implications for season length, in the form of trade-offs between the industry sectors involved. For example, a growth in participation in the cod fisheries by pot vessels, which is evident currently and could expand due to downturns in the crab fisheries, has the potential to further compress fishing seasons for the fixed gear fisheries overall. This would occur under allocation alternatives which retain the existing percentages or those very close to the existing percentages. An increase in the allocation to fixed gear has the potential to mitigate this trend,

though it would be at the expense of the trawl sector, whose seasons would be further compressed by a change in the allocation percentages favoring fixed gear. The reciprocal is also true, though any further compression of trawl fishing seasons could be mitigated to some extent by those alternatives which tend to increase the relative amount of cod taken in target fisheries, as opposed to being taken as bycatch in other groundfish fisheries.

Periods of High Bycatch

Halibut bycatch in general will greatly affect both the longline trawl sectors' ability to take their overall TAC, as well as the length of the seasons. Specific periods of high bycatch may still be unavoidable, though trimester allocations of the longline fishery may help avoid periods of higher bycatch, though these options exist regardless of the percentage allocations between gear types. Trawl fisheries for cod typically occur in the spring of the year and are completed, due to attainment of either the TAC or the PSC cap, by the end of April. This is largely a function of the derby nature of the fishery and will be unaffected by any of the allocation alternatives, other than to slightly shorten, or lengthen, the period of fishing activity.

Halibut bycatch in the cod target fisheries tends to be reduced overall in allocation alternatives which favor fixed gear. These savings occur because trawl fisheries become constrained by their smaller cod quota allocation (at more extreme allocation percentages) and never achieve the PSC caps *currently* allocated to the cod fishery. Though the overall BSAI trawl PSC cap is fixed in regulation, the cod portion of that cap is set during the annual specifications process, and could be apportioned to other trawl fisheries, resulting in little or no overall halibut savings. If not reapportioned to other fisheries, then a potential savings of halibut occurs which can either be reallocated to directed halibut fisheries or 'banked' to increase future halibut biomass. Corresponding increases in the longline cap would be possible under separate amendment, if it is the desire of the Council to increase the cod catch by the longline sector. Under any given gear allocation percentage, halibut bycatch from trawling is minimized in sub-alternatives which allocate a greater percentage of the trawl apportionment to catcher processors.

Waste of Resource (Discards)

The majority of discards are from trawl fisheries, particularly catcher/processor vessels, and primarily because relatively more of their cod catch occurs in groundfish fisheries where cod is not the target (discards are generally higher in non-target fisheries). Overall discards are not expected to change significantly under any of the alternatives, though alternatives which allocate a greater percentage to fixed gear result in the fewest discards, particularly of discards in target fisheries. If an Improved Retention and Utilization (IR/IU) program is implemented (which includes BSAI cod fisheries), the total discards, other than regulatory, will be eliminated for all fisheries, and there will be no difference among any of the alternatives in terms of discards. More of the fish will be taken in target fisheries, due to avoidance reactions of vessels in other groundfish fisheries.

New Entrants From Moratorium Crossover Provisions (Growth of Pot Gear Sector)

The provisions of the moratorium, coupled with the recent downturn in crab fisheries, will likely increase participation in the cod fisheries, particularly of pot gear vessels. Recent data show a doubling of pot gear catch from 1994 to 1995 (from 8,000 mt to 18,000 mt), and a 50% increase so far in 1996 relative to 1995. For example, 1996 catch by pot gear may be as high as 28,000 mt given current catch rates. Given current (1996) cod quotas, and given the fact that trawl and longline gear are currently constrained by PSC caps, all of the alternatives under consideration would accommodate that level of pot gear catch and more. Under the current allocation percentages, the projected pot catch is 41,051 mt, which assumes current PSC caps for the other gear types, and assumes that the pot gear sector could catch that much cod. As an additional reference point, a reversal of the current split, such that fixed gear is allocated 54% of the quota, would result in 51,688 mt available to pot gear.

Unless pot gear catch exceeds those amounts, all of the alternatives would appear to allow for substantial growth in the pot sector, without impacting the catch by the longline sector. If overall cod quotas decrease in the future, then alternatives which allocate a greater (than current) percentage to fixed gear would be necessary to accommodate the growth of the pot sector, without impacting the longline share. In that case, the reallocation would be at the expense of the trawl sector.

Non-target Bycatch of Cod

Bycatch of cod in other groundfish fisheries occurs primarily in trawl fisheries, and the catcher/processor has a relatively higher percentage of non-target catch than catcher vessels. Fixed gear catch occurs almost entirely in target fisheries. As mentioned above, discards of cod are much higher in non-target fisheries than in target fisheries. Because bycatch needs in other fisheries will still be provided for in the management system, any reduction in quota to the trawl sector will mostly be felt by the target cod fisheries. Total amounts taken in other fisheries will remain largely unaffected. An exception to this occurs under an assumption of IR/IU, where it is likely that bycatch of cod in other fisheries will be reduced, thereby providing additional fish for the directed (target) cod fisheries. Although total non-target cod catch remains largely unaffected across alternatives, there are differences in the distribution of target catch between catcher vessels and catcher processors. For example, sub-alternatives which allocate 60% of the trawl sector's quota to catcher vessels result in a disproportionate distribution of the overall trawl target catch to catcher vessels (the catch of cod in targets by the CP sector is greatly reduced - most of their cod catch occurs in non-targets in these cases).

Habitat Concerns

As is described in Chapter 2 and in other existing literature, there are benthic impacts associated with all gear types, though the lack of research in the North Pacific fisheries preclude any quantitative comparisons of impacts under the alternatives being considered. To the extent that preferential allocations to fixed gear will reduce any trawl gear impacts from directed cod fishing, it is possible that effort would be transferred to other trawl fisheries, resulting in a net change of little or no reduction in overall trawling.

Stability in the Fishery and Comprehensive Rationalization

Judgements regarding stability may be very subjective and depend on the perception of stability and upon assumptions regarding potential future steps in the Comprehensive Rationalization process; further, there are the often countervailing issues of stability *across* industry sectors to be reconciled with stability *within* industry sectors. For example, maintaining the current percentage allocations may promote stability across industry sectors, as well as within industry sectors, except that it may not provide for stability within an increasing pot gear fishery which may depend heavily on the cod resource in the future. If the pot gear sector continues to grow at the current rate, it may be necessary to increase the fixed gear allocation to insure future stability of the longline sector, though that of course will be at the expense of stability to the trawl sector. Stability of the onshore processing sector may be impacted by the allocation alternatives as well, with trade-offs between it and the offshore processing sector. Finally, stability within each of the trawl sectors (CV and CP) can be affected by the sub-allocations being considered.

How the various sectors will be impacted under any allocation alternative can also be affected by future management programs which can affect both the overall cod fisheries and particular segments of the cod fisheries; these potential programs include CDQ allocations, the IR/IU program, and individual Vessel Bycatch Accounting (VBA) programs. From the analysis, it appears that any of the alternatives will provide stability to the longline fishery, in terms of maintaining its current harvest levels. Stability to the trawl sector is a bit more difficult to ascertain, because there are possible differences in the distribution of *target* catch between the CV and CP sectors. Overall, an allocation which reflects the current split (49/49) may provide the most stability

across and within industry sectors, though a reciprocal of the current split (54/44 in favor of fixed gear) could provide a similar distribution of target catch, *assuming* an IR/IU program with resulting decreases in the catch of cod in other trawl groundfish fisheries.

Other Information

Chapter 6 contains limited information relative to regional distributional impacts. Vessels whose owner live in Alaska are expected to harvest as little as 16.4% of the Pacific cod caught in target fisheries (under alternatives 1A, 2A, 2B, 2D, 4A, 4B, 4D, and 6A). The most they are expected to harvest is 18.5% (Alternative 5B). Washington vessel owners are expected to harvest the greatest amount of cod, as much as 72.0% of the total under Alternative 6B. Much of this catch would be taken by the freezer longliner and trawl catcher processor fleets. Other states tend to have relatively more harvest from trawl catcher vessels and pot gear vessels. These projections do not represent any significant change from the current situation. Further detail, as well as similar information for a variety of vessel categories, is provided in this chapter.

Also in this chapter are discussions of other applicable laws, including the Regulatory Flexibility Act. No significant impacts are anticipated relative to NEPA, E.O. 12866, or the Regulatory Flexibility Act for any of the alternatives under consideration.

The following agreement has been reached by the negotiating committee on the Bering Sea Aleutian Islands Pacific cod Allocation:

TAC Apportionments:

The trawl sector will be allocated 47% of the Bering Sea and Aleutian Islands Pacific cod TAC. The trawl apportionment will be split between catcher vessels and catcher processors 50/50.

The Fixed gear sector will be allocated 51% of the Bering Sea and Aleutian Islands Pacific cod TAC.

The jig gear sector will be allocated 2% of the Bering Sea and Aleutian Islands Pacific cod TAC.

Rollovers:

On September 1 of each year, the Regional director shall reallocate 100% of any projected unused amount of the Pacific cod allocated to jig vessels to the fixed gear vessels.

If during a fishing year the Regional Director determines that vessels using trawl gear or hook-and line or pot gear will not be able to harvest the entire amount of Pacific cod allocated to those vessels, then NMFS shall reallocate the projected unused amount of Pacific cod to vessels using the other gear type(s).

Halibut PSC Mortality Caps:

The trawl halibut PSC mortality cap for Pacific cod will be no greater than 1,600 mt.

The hook and line gear halibut PSC mortality cap for Pacific cod will be no greater than 900 mt.

Review:

The Council will review this agreement at 4 years following the date of implementation.

Industry Support:

All parties here below signed will support this agreement at the North Pacific Fishery Management Council meeting and through Secretarial review and approval. The Committee strongly recommends that the NPFMC approve this agreement without change. Any substantive change from this agreement releases the parties from supporting said agreement.

Signatures:

James Bruce

[Signature]

Fred A. Yeck

[Signature]

Thom Smith

[Signature]

Sam O. Fjelle

Assessment of the Negotiated Agreement on Pacific Cod Allocations

This document will provide a brief assessment of the negotiated agreement on Pacific Cod Allocation in the BSAI. The assessment is based on the analysis of the original alternatives in the draft EA/RIR/IRFA, and uses the same assumptions and parameters, unless specifically changed by the agreement. The provisions of the agreement are listed below:

Provisions of the Agreement

1) **TAC Apportionments:**

The trawl sector will be allocated 47% of the Bering Sea and Aleutian Islands Pacific cod TAC. The trawl apportionment will be split between catcher vessels and catcher processors 50/50.

The Fixed gear sector will be allocated 51% of the Bering Sea and Aleutian Islands Pacific cod TAC.

The jig gear sector will be allocated 2% of the Bering Sea and Aleutian Islands Pacific cod TAC.

2) **Rollovers:**

On September 1 of each year, the Regional director shall reallocate 100% of any projected unused amount of the Pacific cod allocated to jig vessels to the fixed gear vessels.

If during a fishing year the Regional Director determines that vessels using trawl gear or hook-and line or pot gear will not be able to harvest the entire amount of Pacific cod allocated to those vessels, then NMFS shall reallocate the projected unused amount of Pacific cod to vessels using the other gear type(s).

3) **Halibut PSC Mortality Caps:**

The trawl halibut PSC mortality cap for Pacific cod will be no greater than 1,600 mt.

The hook and line gear halibut PSC mortality cap for Pacific cod will be no greater than 900 mt.

4) **Review:**

The Council will review this agreement at 4 years following the date of implementation.

5) **Industry Support:**

All parties here below signed will support this agreement at the North Pacific Fishery Management Council meeting and through Secretarial review and approval. The Committee strongly recommends that the NPFMC approve this agreement without change. Any substantive change from this agreement releases the parties from supporting said agreement.

Parameter Changes From the EA/RIR/IRFA.

Several parameters and assumptions are changed under the agreement, which were used in the draft EA/RIR/IRFA. Primary among these changes are the apportionments to each gear group as well as the trawl CP/CV split. The agreed upon allocation percentages were not explicitly discussed in the analysis, but clearly fall within the scope of the alternatives considered. Alternative 6D in the EA/RIR/IRFA, which would allocate 49% to both fixed and trawl gears and would split the trawl apportionment 45/55 to CV and CP respectively, is the alternative which best approximates the estimated outcomes of the Pacific cod agreement. Under that

Alternative 47.9% is projected to be harvested by trawlers with the remaining 1.1% of their apportionment reallocated to fixed gear because of attainment of the 1,685 mt trawl halibut PSC mortality cap.

Under the agreement, the maximum amount of halibut mortality which can be allocated to the Trawl Pacific cod fisheries is reduced to 1,600 mt from the 1996 level of 1,685 mt. The amount of halibut allocated to the trawl Pacific cod fishery is set in the "Spec. Setting Process" by the Council in its December meeting. While the FMP sets the total amount of trawl halibut mortality by trawlers at 3,775 mt, the Council may set amounts for specific fisheries. In most instances the Council has followed the recommendations put forward by the trawl sector. Under the provisions of this agreement the trawl sector agrees to recommend that no more than 1,600 mt of halibut mortality be apportioned to the Pacific cod trawl fishery. Therefore, the assessment of the impacts of the agreement will use 1,600 mt as the trawl halibut PSC cap. The agreement does not include any split of the trawl halibut PSC mortality cap, which was an option under the original alternatives.

The agreement also specified a maximum amount of halibut PSC mortality which could be allocated to the longline Pacific cod fishery at 900 mt. Currently the BSAI FMP sets the total amount of halibut PSC mortality for all hook and line fisheries at 900 mt. The Council usually follows the longline sector recommendation to split that amount among the Pacific cod and Greenland turbot fisheries. In 1996, 800 mt are allocated to the Pacific cod fisheries and 100 mt are allocated to turbot. If the longline sector were to use all 900 mt of halibut in the Pacific cod fishery, then, unless there is change in the FMP, no halibut would be available for the turbot fishery, and that fishery would not be prosecuted. The assessment of the agreement assumes that the longliners will continue to wish to prosecute the turbot fishery, and that only 800 mt of halibut will be apportioned to the longline Pacific cod fishery. The effects of modifying this assumption will also be discussed.

The agreement would change the regulations regarding the reallocation of unharvested jig catches. Currently, NMFS may reapportion unharvested jig catches to both the fixed and trawl gears proportionately to the Pacific cod allocation. Under the agreement any reapportionment will be directed only to the fixed gear sector. In the assessment of the agreement we assume that the entire jig allocation is taken by the jig fleet, as was done in the EA/RIR/IRFA. We will, however, discuss the impacts of a potential reallocation.

All other parameters affecting the projection of catches under the agreement are unchanged from the base model run in the EA/RIR/IRFA. These assumptions are discussed in detail in Chapters 4 and 5. Specifically, we assume that the TACs from 1996 will apply to agreement. We also assume that catch, bycatch, halibut mortality, and discard rates experienced by the various fleets in 1995 will apply. We also use the same product prices as in the EA/RIR/IRFA.

Projected Outcomes of the Agreement

The projected outcomes under the agreement are shown in Table 1 on the following page. Each row of Table 1, shows a different measure of projected outcomes of the Pacific cod fisheries under the agreement, with the exception of Row 0 which shows the total catch in 1995, with percentages of the 1995 TAC. The next three rows (Rows 1-3) show total, target, and non-target catches of Pacific cod by the four gear groups. Rows 4-6 show discards. These are followed by Rows 7-10 showing PSC mortality and catches of halibut, *C. bairdi*, *C. Opilio*, and Red King Crab. Rows 11-15 show total projected gross revenue and the reduced gross revenue in other target fisheries resulting from bycatch in the Pacific cod fisheries. The first set of four columns shows projected amounts for each gear while the second set shows the percentages of the total for that measure.

Looking at Row 1 in the table, we see that the model projects that the longline fleet will catch 94,112 mt under the agreement. This is the same outcome projected in the EA/RIR/IRFA under each alternative for this gear groups. This result occurs because the longline fleet is projected to be constrained by their 800 mt halibut bycatch cap (see row 7). The pot fleet is projected to catch 46,717 mt, which means the fixed gear fleet is projected to catch 52.2% of the total non-jig Pacific cod. This exceeds the fixed gear apportionment and results because the model projects that the trawl fleet will be constrained by their halibut PSC cap (now 1,600 mt) before they can catch their entire apportionment.

Table 1: Projected Outcomes Under the Negotiated Agreement

Assumes Inseason Reallocation of Non-Jig Pacific Cod.

| (Row #) FISHERY MEASURE | Metric Tons | | | | | Percent of Total | | | | |
|---|-------------|----------|----------|----------|-----------|------------------|-------|----------|----------|--------|
| | Longline | Pot | Trawl CV | Trawl CP | Total | Longline | Pot | Trawl CV | Trawl CP | Total |
| (0) 1995 Total P. Cod Catch In All Fisheries (Metric Tons) | 94,163 | 18,782 | 50,208 | 68,537 | 231,690 | 37.7% | 7.5% | 20.1% | 27.4% | 92.7% |
| (1) Total P. Cod Catch In All Fisheries (Metric Tons) | 94,112 | 46,717 | 60,322 | 63,450 | 264,600 | 34.9% | 17.3% | 22.3% | 23.5% | 98.0% |
| (2) Total P. Cod Catch in P. Cod Target Fisheries (Metric Tons) | 94,112 | 46,717 | 42,348 | 27,713 | 210,889 | 44.6% | 22.2% | 20.1% | 13.1% | 100.0% |
| (3) Total P. Cod Catch in Non-P. Cod Target Fisheries (Metric Tons) | - | - | 17,974 | 35,737 | 53,711 | 0.0% | 0.0% | 33.5% | 66.5% | 100.0% |
| (4) Total P. Cod Discards in All Fisheries (Metric Tons) | 3,552 | 613 | 9,575 | 26,132 | 39,871 | 8.9% | 1.5% | 24.0% | 65.5% | 100.0% |
| (5) Total P. Cod Discards in P. Cod Target Fisheries (Metric Tons) | 3,552 | 613 | 3,706 | 3,710 | 11,580 | 30.7% | 5.3% | 32.0% | 32.0% | 100.0% |
| (6) Total P. Cod Discards in Non-P. Cod Fisheries (Metric Tons) | - | - | 5,869 | 22,422 | 28,290 | - | - | 20.7% | 79.3% | 100.0% |
| (7) Halibut Mortality in P. Cod Target Fisheries (Metric Tons) | 800 | 25 | 1,070 | 530 | 2,425 | 33.0% | 1.0% | 44.1% | 21.8% | 100.0% |
| (8) Bycatch of C. Bairdi in P. Cod Target Fisheries (Animals) | 24,622 | 157,345 | 106,754 | 157,181 | 445,902 | 5.5% | 35.3% | 23.9% | 35.3% | 100.0% |
| (9) Bycatch of C. Opilio in P. Cod Target Fisheries (Animals) | 75,584 | 382,979 | 21,345 | 27,981 | 507,889 | 14.9% | 75.4% | 4.2% | 5.5% | 100.0% |
| (10) Bycatch of Red King Crab in P. Cod Target Fisheries (Animals) | 203 | 7,439 | 553 | 2,477 | 10,672 | 1.9% | 69.7% | 5.2% | 23.2% | 100.0% |
| (11) Gross Revenue In P. Cod Target Fisheries (Millions) | \$ 80.11 | \$ 38.93 | \$ 37.24 | \$ 27.02 | \$ 183.29 | 43.7% | 21.2% | 20.3% | 14.7% | 100.0% |
| (12) Reduced Gr. Rev. in the Directed Halibut Fishery (Millions) | \$ 2.32 | \$ 0.07 | \$ 4.50 | \$ 2.23 | \$ 9.12 | 25.4% | 0.8% | 49.3% | 24.4% | 100.0% |
| (13) Reduced Gr. Rev. in the Directed Crab Fisheries (Millions) | \$ 0.23 | \$ 1.53 | \$ 0.76 | \$ 1.15 | \$ 3.67 | 6.2% | 41.7% | 20.6% | 31.4% | 100.0% |
| (14) Reduced Gr. Rev. in the Pollock Fisheries (Millions) | \$ 1.35 | \$ 0.02 | \$ 6.73 | \$ 4.28 | \$ 12.39 | 10.9% | 0.1% | 54.3% | 34.6% | 100.0% |
| (15) Reduced Gr. Rev. in All Directed Fisheries (Millions) | \$ 3.90 | \$ 1.62 | \$ 11.99 | \$ 7.66 | \$ 25.17 | 15.5% | 6.4% | 47.6% | 30.4% | 100.0% |

Notes: 1) Assumptions regarding catch, bycatch, and discard rates as well as revenue per ton are the same as used in the EA/RIR/IRFA,

and are found in the footnotes of Table 5.2-5.17 on pages 121-136.

2) Row 0 percentages show catch as a percent of the 1995 TAC which was 250,000 mt.

3) Row 1 percentages show projected catch as a percent of the 1996 TAC, which is 270,000 mt.

Looking at the trawl catches, we see that the catcher processors catch 50% of the trawl apportionment ($47\% \times 50\% = 23.5\%$), but the catcher vessels are not able to catch their entire allocated amount. The 3,128 mt shortfall is reallocated to fixed gear, and is projected to be harvested by the pot fleet. Thus the Trawl CP are constrained by the allocation while the Trawl CV are constrained by the joint halibut PSC cap. This difference is a result of the higher halibut bycatch mortality rates of the trawl catcher vessels (25.271 kg/mt compared to 19.119 kg/mt for trawl CPs), the assumption that non-target catches are basically unaffected by the allocation (see row 3), and that the ratio of targets catches between catcher processors and catcher vessels will be 0.9663 to 1.0, up to the point where one is constrained by the allocation.

Comparing the projected total catches percentages in Row 1 with actual 1995 catches percentage from Row 0, we see that the longline catch as a percent of the TAC is projected to fall. This is because the TAC increased while the longline catch (constrained by the halibut PSC) was nearly unchanged. The amount of Pacific cod available to the pot fleet as a percentage of TAC is more than double the 1995 percentage of the TAC. The projected catch by the trawl catcher vessels as a percent of TAC is expected to increase from 20.1% to 22.3%, while the projected catch by catcher processors is expected to drop from 25.5% to 23.5%.

Row 2 shows the target catches of Pacific cod. As in the EA/RIR/IRFA target catch for both fixed gear groups equals their total catches of Pacific cod. Target catches by trawler are considerably less than their totals, because of the catches of Pacific cod in other target fisheries as shown in row 3. The allocation of Pacific cod is unlikely to affect, in any large degree, the catches of Pacific cod in other target fisheries. This is due to the way the current regulations define and manage target and directed fishing. Looking at the first three rows we see that the trawl CP group takes a greater amount of their total Pacific cod as bycatch in the other target fisheries, than they catch in the target fishery. The opposite is true of the trawl CV group.

Rows 4-6 show discards of Pacific cod in total, in Pacific cod target fisheries, and in target fisheries for other species. The greatest amounts of discards of Pacific cod are projected to occur in target fisheries for other species. The discards in non-Pacific cod target fisheries are largely unaffected by the alternatives. (See Table 5.8 in the EA/RIR/IRFA on page 127 for a comparison.) The lower discard rate of the longliners results in fewer discards than either of the trawl groups even though target catch by the longliners exceeds the combined trawl target catch.

Row 7 shows the projected halibut PSC mortality under the agreement. Overall, 2,425 mt of halibut mortality are projected. This represents a savings of 82 mt over Alternative 6D which most closely resembles the agreement. The savings are due to the 85 mt reduction in the halibut PSC cap for the trawl group. Increased pot catches result in an additional 3 mt of halibut mortality. The trawl CVs take 44.1% of the halibut in the Pacific cod fisheries, more than twice the percentage taken by the catcher processors. This is a result not only of their higher bycatch rate but also relative size of the target fishery.

Rows 8-10 show the projected bycatch of crab under the agreement. As noted in the EA/RIR/IRFA the pot vessels have generally higher bycatch rates of crab than any other gear. This is particularly true of *C. opilio* and red king crab. Reliable information is unavailable regarding the mortality of crab taken as bycatch, and therefore the information in the table may not be a complete indicator of impacts of the agreement on crab stocks.

Row 11 shows the projected gross revenue under the agreement. Gross Revenue per ton of target fishery estimates were calculated in Chapter 3, of the document. As indicated there, gross revenue is only part of the net benefit equation. By itself, gross revenue is potentially misleading as an indicator of impacts of the agreement. None-the-less, we have included this information as well as estimates of reduced gross revenue (opportunity costs), in order to allow comparisons to other alternatives in the EA/RIR/IRFA.

In general it appears that the negotiated agreement will allow for expansion of the pot fleet, with only minor impacts on the other sectors of the industry. Overall halibut mortality is reduced, as are Pacific cod discards.

Projected Outcomes Under the Agreement With Changes in Selected Parameters

The following section shows projected outcomes using the agreement as a basis, but with changes in selected parameters. In this section we will briefly discuss changes to the longline halibut cap, and the reallocation of the un-caught jig apportionment. We will also examine the effects of potential changes to the Pacific cod fisheries outside of the allocation. These include implementation of CDQs, changes in the Pacific cod TAC, changes in the trawl harvest vessel bycatch rate, and changes in the bycatch of Pacific cod in other groundfish target fisheries as a result of the Improved Retention / Improved Utilization issue.

Reallocation of the Uncaught Jig Apportionment: In 1995 the jig catch of Pacific cod was approximately 600 mt. This represented just over 0.2% of the 1995 TAC. Under the agreement NMFS will reallocate to the fixed gear sector that part of the jig apportionment which is unlikely to be harvested by the jig gear group. If it is assumed that jig gear will account for 0.5% of the TAC in the future, then we can project that 4,050 mt may be reallocated to fixed gear under the agreement (given the assumption of a 270,000 mt TAC for Pacific cod). Since the longline gear group is constrained by their 800 mt halibut cap, we project that the entire reallocation would be available for harvest by pots. This would bring the pot total up to 50,767 mt.

Increase the Longline Halibut PSC Mortality Cap to 900 MT. Under the agreement no more than 900 mt of halibut PSC may be apportioned to the longline sector for use in the Pacific cod fishery. If 900 mt were allocated to the longline Pacific cod fishery, and the longline bycatch rate was constant at 1995 levels (8.501 kg/mt) then the target catch of the longline gear would be projected to increase to 105,876 mt. This would result in a decrease of Pacific cod available for harvest by pot vessels to 34,952 mt. Additionally, increasing the Pacific cod longline cap to 900 mt of halibut mortality would eliminate the fishery for Greenland Turbot with longlines, unless an FMP amendment increasing the overall longline halibut cap were also implemented. Catches by the trawl groups would not be directly impacted.

Implementation of CDQs. The Council's License Limitation Program, if approved by the Secretary of Commerce, includes a CDQ program which would allocate 7.5% of all TAC and PSC caps to communities in Western Alaska. CDQ allocations would not be subject to the gear split under the Pacific cod allocation. It is anticipated that the CDQ program could be implemented by 1998. Allocating 7.5% of the 1996 Pacific cod TAC to the CDQ program would leave 249,750 mt available for the fixed, trawl, and jig apportionments. The longline halibut cap would be reduced to 740 mt, and the trawl cap reduced to 1,480 mt. Trawl CV catches are projected to equal 57,568 mt, with 39,818 mt taken in the target fishery. Trawl catcher processors are projected to catch 24,780 mt in the Pacific cod target fishery, and 58,961 mt overall. Longline catches are projected to total 87,054 mt before being constrained by their halibut PSC cap. The pot fleet would have 41,442 mt available to it, prior to any reallocation of the unharvested jig apportionment.

Eliminate the Halibut PSC Cap In Order to Calculate Unconstrained Usage of Halibut. In order to estimate just how much halibut would be needed to prosecute the Pacific cod target fisheries under the agreement, we ran the model without halibut as a constraint on catch. We also make the assumption that pot catch will be 35,000 mt. (A similar run of the model for the original alternatives was discussed on pages 149-153 of the EA/RIR/IRFA.) In this scenario longline catches of Pacific cod would total 102,700 mt with 873 mt of halibut PSC mortality. Trawl catches would be constrained by the apportionment at 63,450 mt for each group. Halibut PSC mortality by the Trawl CV in the Pacific cod fishery would total 1,150 mt, while the Trawl CP halibut mortality would be 530 mt. From this information we can infer that the trawl-CV group would need an additional 80 mt of halibut in order to catch their 50% of the Trawl apportionment, given 1995 bycatch and mortality rates.

A Reduction In The Trawl CV Halibut Bycatch Rate. In the previous section we noted that an additional 80 mt. of halibut mortality would be needed for the trawl CV group to harvest their full apportionment. Trawl CV harvests could also be increased through a reduction in their halibut bycatch. If the Trawl CV group were to reduce their halibut bycatch mortality to 23.53 kg./mt (a 7% reduction), then they would be able to catch their full apportionment of 63,450 mt. Under this scenario the overall trawl halibut mortality would remain at 1,600 mt.

Pacific Cod Bycatch Reduction Under IRIU. Under IRIU it has been assumed that the bycatch of Pacific cod in other trawl target fisheries would be reduced, as vessels would have greater incentives to avoid unwanted species. Such a bycatch reduction will obviously decrease the amount of non-target catches of cod, increasing the amount available to be used in target fisheries. Because the trawl catcher processors have the greatest amount of non-target Pacific cod catch, they would stand to gain relatively more target catch than would the trawl catcher vessels. In other words, bycatch reductions under IRIU would tend to increase overall target catches of Pacific cod, but this increase would all go to the catcher processor fleet at some expense to the trawl catcher vessel fleet. Table 2 below shows total, target and non-target catches of the two trawl groups under five bycatch reduction scenarios: the base agreement, a 7% reduction, a 14% reduction, a 21% reduction, and a 28% reduction. These reduction numbers were chosen because a 21% reduction in Pacific cod bycatch in other groundfish trawl target fisheries results in the maximum trawl target catch attainable under the agreement, given the halibut bycatch rates, the 1996 TAC, and the other assumptions of the projection model.

Table 2

| Bycatch Reduction Amount | Pacific Cod Catch Under the Agreement | | | | | | |
|--------------------------|---------------------------------------|------------|--------|-------------------------|------------|--------|--------------|
| | Trawl Catcher Vessels | | | Trawl Processor Vessels | | | Target Ratio |
| | Target | Non-Target | Total | Target | Non-Target | Total | |
| Base | 42,348 | 17,974 | 60,322 | 27,713 | 35,737 | 63,450 | 0.6544 |
| 7% | 40,422 | 16,700 | 57,122 | 30,258 | 33,192 | 63,450 | 0.7485 |
| 14% | 38,498 | 15,425 | 53,923 | 32,802 | 30,648 | 63,450 | 0.8520 |
| 21% | 36,575 | 14,150 | 50,724 | 35,343 | 28,105 | 63,448 | 0.9663 |
| 28% | 36,575 | 12,871 | 49,446 | 35,343 | 25,565 | 60,908 | 0.9663 |

The results of an "IRIU Pacific cod bycatch reduction" may be somewhat counter-intuitive. With a 7% bycatch reduction, CV target catches drop by 1,926 mt, while CP target catches are projected to increase by 2,545 mt. Overall trawl target catches therefore increase by 619 mt. Total Pacific cod catch by the trawl CP group is projected to be constant at 63,450 mt, i.e., 50% of the trawl apportionment. Total catch by the catcher vessels is reduced to 57,122 mt. Thus 3,200 mt additional Pacific cod will be available to pot vessels. This "counter-intuitive" projection results from the higher relative bycatch rates of the trawl CV sector and the assumption that until constrained by the group's apportionment of Pacific cod, target catches occur at a CP/CV ratio of 0.9663 to 1. Projections with the assumption that bycatch of Pacific cod decreases by 14% show an increase in the overall trawl target catch of 1,239 mt Pacific cod available to pots increases by 6,399 mt from the base scenario. With a 21% bycatch reduction, the target catch ratio of trawl CP to trawl CV reaches 0.9663, and the trawl target catches are projected to hit the halibut PSC cap at the same time as the Trawl CP apportionment is reached. Bycatch reductions beyond 21%, are not projected to further change trawl target catches, and affect only the bycatch of Pacific cod in other trawl target fisheries.

Changes In the Pacific Cod TAC. The EA/RIR/IRFA indicates that future Pacific cod ABCs and therefore TACs are projected to decrease through 1999. In light of the possibility that TACs may change we examined the effects of both lower TAC and of higher TACs.

Higher Pacific cod TAC results in greater amounts available to the pot fleet but because the longline fleet is constrained by their halibut bycatch, their Pacific cod catch is unlikely to be affected. For the trawl sector, higher TACs result in the same type of impact as a reduction in Pacific cod bycatch discussed above. Because of the assumption that trawl target catches will occur at a ratio of 0.9663 mt of CP target catch for every 1.0000 mt of trawl CV catch until one group is constrained by the apportionment, increases in the TAC are projected to benefit the catcher processors at some expense to the catcher vessels. This will hold up to the point where target catches equal this ratio. This occurs with a Pacific cod TAC of 302,417 mt. At that level target catches of Pacific cod by the trawl CV group are projected to be 36,575 mt, with trawl CP target projected to be 35,343 mt. These target amounts are the same as projected with a 21% bycatch reduction above. With this TAC, Trawl CVs are projected to catch 18% of the total Pacific cod TAC with the Trawl CPs projected to catch 23.5% of the TAC. Under this scenario the pot fleet would have 76,628 mt available.

According to the EA/RIR/IRFA, lower TACs in the future are much more likely than higher TACs. As TACs decrease the projected trawl split becomes closer to 50/50. This is because all reductions are assumed to be felt in the target fisheries, rather than in the bycatch of Pacific cod in other groundfish fisheries. At a TAC of 262,420 mt we project that the trawl CV total catch will be equal to the total catch of the trawl CP group at 61,669 mt. At that level CP target catches drop by 1,786 mt to 25,928 mt, while CV target catches drop by the to 1,789 to 43,698 mt. (The ratio of the decrease is 0.9663 to 1.0000.) At this TAC, the trawl halibut PSC cap is attained as well as the trawl apportionment. Further TAC reductions will continue to yield a 50/50 trawl split and attainment of the 47% trawl apportionment, and they are also projected to reduce the amount of halibut mortality in the trawl fisheries, i.e., the 1,600 mt trawl halibut mortality cap will not be attained.

Summary and Conclusions

The negotiated agreement would, on paper, reapportion 7% of Pacific cod TAC from the trawl sector to the fixed gear sector. The agreed upon allocation would more closely match what currently occurs in the Pacific cod fisheries than does the existing apportionment. Because the allocation under the agreement takes place at the beginning of the year rather than through in-season reallocation, it is more likely that the full Pacific cod TAC will be taken. In other words, the trawl sector is more likely to take their entire allocation of Pacific cod, possibly eliminating the need to reallocate cod to the fixed gear sector later in the year. A greater assurance that Pacific cod will be available to the pot fleet will likely mean more pot vessels will enter the fishery, thus providing a "safety net" for displaced crab vessels. Any inseason reallocations that would occur (other than from the jig allocation) are projected to come from the trawl catch vessel apportionment. This is a result of their higher halibut bycatch rates, and greater reliance on Pacific cod as a target. If the TAC is reduced because of smaller ABCs, it is more likely that the trawl catcher vessels will take their entire apportionment. In any event, the agreement reduces the amount of halibut that may be taken in the trawl Pacific cod fisheries.



NEPTUNE MARINE PRODUCTS, INC.

P.O. Box 17417
Seattle, WA 98107
5330 Ballard Ave NW
Phone (206) 789-3790 FAX (206) 789-1795



Mr. Rick Lauber, Chairman
North Pacific Fishery Management Council
P.O. Box 103136
Anchorage, AK 99501

June 3, 1996

Fax sent to:
907-271-2817

RE: AGENDA ITEM C-3 ; BSAI PACIFIC COD ALLOCATIONS

Dear Mr. Lauber and Council Members,

I attended the negotiating committee meeting held in Seattle on May 24, 1996 regarding BSAI Pacific cod allocations. I came to the meeting halfway expecting to encounter "allocation gridlock". I was pleasantly surprised at the outcome of the negotiations between the trawl and fixed gear groups.

My compliments to the committee's chair, Dr. David Hanson, and all the committee members for a job well done considering the obstacles involved. The agreement that was crafted by the negotiating committee involved concessions given by both sides. I believe it represents a fair and reasonable allocation for all the parties involved and would recommend the Council approve the allocation plan as proposed by the committee.

I doubt the allocation plan proposed will hinder the continued development of the Pacific cod pot fishery. The cod pot fishery has proven itself to be the cleanest of all gear types targeting cod. I would encourage the Council to continue to provide opportunities for the development of more selective fishing gear. The negotiating committee recommended that the allocation plan be reviewed in 4 years. I would also suggest that 4 years might be a good time frame in which changes in the fishery could be observed and changes made.

I expect there will be some public testimony concerning perceived problems in an expanded cod pot fishery. Hopefully the following information will help the Council understand some of the facts concerning the cod pot fishery:

GHOST FISHING POTS - The use of biodegradable cotton twine in escape panels has shown to be very effective in preventing lost pots from ghost fishing and has virtually eliminated this problem. Enforcement of the escape panel regulation has shown a high level of compliance by fishermen fishing cod pots. If a pot is separated from it's buoy, the cod inside the pot will likely find their way out through the entrance triggers as soon as the lure of the bait is gone. Fishermen report the longer the pot's soak time, the less cod are found in the pot. This indicates the cod have managed to escape, further reducing any cod mortality prior to the cotton twine breaking. The escape of cod from the pot on a long soak is one of the reasons that cod pot fishermen only use around 100 pots, pulling them twice per day to provide for a short soak time and less chance for the cod to escape.

Pacific cod allocation - Page 2

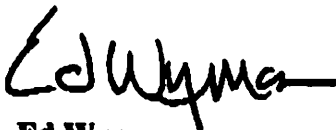
June 3, 1996

CRAB MORTALITY - An expanded cod pot fishery will result in more crab being handled as bycatch. There is a very low mortality rate for the crab caught in the cod pot fishery. This fact is often left out of documents concerning the bycatch of crab in the cod pot fishery. Observer reports indicate an excellent chance for crab survival. The use of excluders on the pot's trigger entrances not only keeps most halibut out of the cod pots, but it also keeps most crab from entering the cod pot. There are additional simple, low cost pot design modifications that could further reduce the bycatch of crab, if needed. I think the record indicates there is no problem with crab mortality in the cod pot fishery at the present time and doubt any problems will surface with an expanded cod pot fishery.

SIZE SELECTIVITY IN COD POTS - Currently there are no regulations regarding mesh size in cod pots, or, requiring the use of escape rings for small fish. Realistically, such a regulation is not needed at this time. Most of the juvenile fish that enter the pot can easily escape through the fingers on the triggers or through the existing web. If the efficiency of the pot's design or entrances increases to prevent the escape of all fish, I would recommend that the Council look at the issue at that time. Once again, there are simple, low cost modifications that can make cod pots not only species selective, but even more size selective.

In summary, I would encourage the Council to pass the agreement developed by the BSAI Pacific cod allocation negotiating committee.

Sincerely,



Ed Wyman

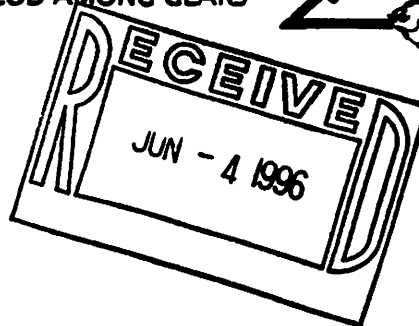
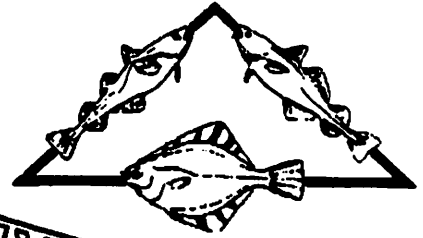
Alaska Groundfish Data Bank

TO: RICK LAUBER, CHAIRMAN
NORTH PACIFIC FISHERY MANAGEMENT COUNCIL

RE: APPORTIONMENT OF BERING SEA PACIFIC COD AMONG GEARS

DATE: JUNE 4, 1996

SENT BY FAX: 1 PP



Dear Rick:

The members of Alaska Groundfish Data Bank support the industry negotiated agreement for apportionment of the Bering Sea Pacific cod quota among gear types and, for trawl gear, among catcher and catcher-processors. We also support the negotiated agreement setting limits on the amount of halibut mortality trawl and longline gear can each use for the Pacific cod target.

We feel the agreement is a "package" which is win-win for all gear groups -- each element of the package is essential to overall acceptance of the negotiated agreement.

We also want to compliment the Chairman for convening the negotiating committee, the members of the committee for a job well done and Dave Hanson without whose skilled mediation this agreement may not have been possible.

Sincerely,

Chris Blackburn, Director
Alaska Groundfish Data Bank

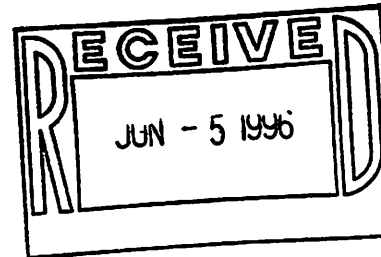
**KODIAK
VESSEL
OWNERS'
ASSOCIATION**

326 Center Avenue, Suite 20
P.O. Box 13
(907) 486-378
Fax (907) 486-247

HALIBUT • SABLEFISH • PACIFIC COD • CRAB

June 4, 1996

Richard B. Lauber, Chairman
North Pacific Fishery Management Council
605 West 4th Avenue
Anchorage, AK 99501-2252



RE: BSAI Pacific Cod Gear Allocation

Dear Rick,

As an association representing the interests of both pot and hook and line fishing vessels, the allocation of the Bering Sea/Aleutian Islands pacific cod resource by gear is an extremely significant decision. Because pacific cod is practically the only open access groundfish fishery available to the fixed gear fleet, adequate allocation of this resource is vital to the continued operation of this fleet. With the impending sunset of the current allocative amendment we want to insure that final Council action allows for such continuation, particularly in light of changes in the prosecution of the pacific cod fishery.

The depressed state of crab resources has affected the participation of pot vessels in the pacific cod fishery. Pot vessel participation has steadily increased, demonstrating a harvest trend which roughly doubles each year since 1993. This has not yet negatively impacted the hook and line harvesters who share the fixed gear allocation with the pot vessels for two reasons: the pot fleet's harvest has represented a relatively small portion of the TAC and; the unused trawl allocation has been reallocated in the fall of each year to the fixed gear sector.

In addition to increased participation of pot vessels, there have been other changes which have altered the prosecution of the fishery. The most significant of these changes has been the drastic (69%) increase in the trawl apportionment of halibut PSC from 1000 MT (1993), during the open access fishery, to the current apportionment of 1685 MT (1996). This drastic shift of halibut PSC has resulted in a decreased probability of adequate reallocation of pacific cod from trawl gear to fixed gear. This change, above all others relative to the actual allocation of pacific cod, has been the source of our greatest concerns.

While increased pot harvest may detract from the overall availability of pacific cod resources to the hook and line fleet the use of pots for harvesting reduces discards, PSC mortality, and non-target bycatch. Suffice to say the increasing harvest of pacific cod by trawl vessels does not have similarly reductive effects and in fact will exact additional negative impacts to habitat in the areas of trawl activity. We are extremely concerned about the levels of discard, bycatch, PSC mortality and habitat degradation associated with trawl activity. However, the Council's ability to address these conservation issues with substantive changes to fishery management is evidently constrained by the controversial nature of an allocative decision.

At its April meeting the Council formed a committee of industry representatives in hopes that an allocation might be negotiated by industry. Although the majority of the fixed gear fleet were extremely skeptical of the committee's ability to produce an agreement, the Council had indicated its desire for an agreement to be reached in this type of forum and we entered into the negotiation in good faith. As you are well aware, the committee was able to reach a unanimous agreement.

The allocation described in this agreement is not what the fixed gear fleet had envisioned as necessary to support their harvest needs, nor does it fully realize the reductions in discards, PSC mortality and non-target bycatch of cod described in the problem statement. Even though these goals were not achieved, we support the agreement of the committee. Our commitment to a good faith effort in the negotiation was a contributing factor in the agreement reached by the committee. We fully realize the controversial nature of this decision limits the scope of the Council's actions, and we prefer movement in a positive direction over stalemate. We feel that support of the committee's agreement represents that positive motion, though it falls short of our conservation goals.

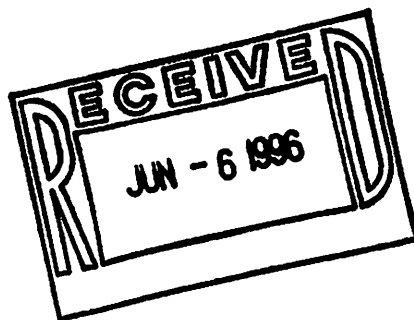
Last but not least, we would like to commend Dave Hansen for his skillful mediation during the negotiating process. There would be no agreement for the Council to consider had it not been for his evenhanded control of the proceedings. He should be congratulated for his efforts, as should the Council staff for their hard work and diligence.

We urge the Council to support the agreement presented by the committee in its entirety, the details of the agreement striking the delicate balance that achieved consensus.

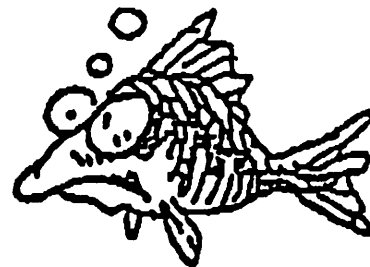
Sincerely,


Lisa Polito
Executive Director

**North
Pacific
Longline
Association**



11/20/96 2-5



June 4, 1996

Mr. Richard B. Lauber, Chairman
North Pacific Fishery Management Council
605 West 4th Avenue
Anchorage, AK

RE: Negotiated BSAI Cod Allocation

Dear Rick:

Our board of directors has reviewed the agreement on BSAI cod allocations negotiated on May 24, 1996. Since each word was the subject of scrutiny by the negotiators, we wish to encourage the Council to adopt the measure, verbatim.

Thank you.

Sincerely,

Don Iverson
Don Iverson
President

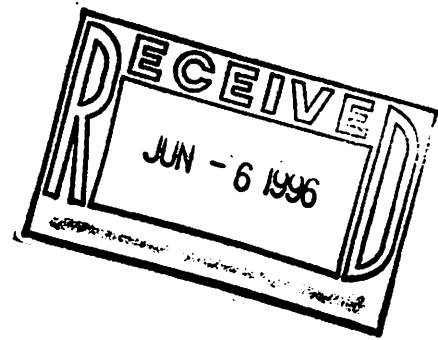


907-486-3910
Box 991

Kodiak, Alaska
99615

FAX 486-6292

June 5, 1996



Mr. Rick Lauber, Chairman
North Pacific Fishery Management Council
605 West 4th Avenue
Suite 306
Anchorage, Alaska 99510

RE: Apportionment of Bering Sea Pacific Cod Among Gear Types

Dear Rick:

The Alaska Dragger Association support the industry negotiated agreement for apportionment of the Bering Sea Pacific cod quota among gear types and, for trawl gear, among catcher and catcher-processors. ADA also supports the negotiated agreement setting limits on the amount of halibut mortality trawl and longline gear can each use for the Pacific cod target.

We feel this is a win-win "agreement" for all gear groups and recommend that the council approve this agreement without change. Any major changes to this agreement would probably cause an additional two days of arguments at the council meetings.

Sincerely,

Al Burch
Executive Director

Jay E. Stinson
President

**FISHING VESSEL OWNERS' ASSOCIATION
INCORPORATED**

ROOM 232, WEST WALL BUILDING • 4005 20TH AVE. W.
SEATTLE, WASHINGTON 98199-1290

SINCE 1914

June 7, 1996

Mr. Rick Lauber
Chairman
North Pacific Fishery Management Council
605 W. 4th Ave., Suite 306
Anchorage, AK 99501-2252

Dear Chairman Lauber:

This letter, on behalf of the Fishing Vessel Owners' Association (FVOA), addresses the Pacific Cod allocation by gear type in the Bering Sea/Aleutian Island areas (Amendment 46 to the FMP).

The members of the FVOA recommended to the Council at the April Council meeting to establish a negotiating team of the user groups who were affected by the allocation and attempt to have industry resolve the Cod allocation issue. Additionally, we recommend against any sunset provisions of the Council's final decision on the allocation of Pacific Cod in the Bering Sea, though a periodic review would be prudent.

We are pleased that the Council has chosen to establish a negotiating team to resolve the Pacific Cod allocation problem. It is our understanding that the results of the negotiations resulted in the following unanimous recommendations to the Council.

TAC Apportionments. The trawl sector will be allocated 47% of the Bering Sea and Aleutian Islands Pacific cod TAC. The trawl cap will be split between catcher vessels and catcher processors 50/50.

The Fixed Gear sector will be allocated 51% of the Bering Sea and Aleutian Islands Pacific cod TAC.

The Jig Gear sector will be allocated 2% of the Bering Sea and Aleutian Islands Pacific cod TAC.

Rollovers. On September 1 of each year, the Regional Director shall reallocate 100% of any projected unused amount of the Pacific Cod allocated to jig vessels to the Fixed Gear vessels.

If during a fishing year the Regional Director determines

FAX
(206) 283-3341

LATITUDE: 47° 39' 36" NORTH

DIAL "A VESSEL"
(206) 283-7735

LONGITUDE: 120° 22' 58" WEST

that vessels using trawl gear or hook-and-line or pot gear will not be able to harvest the entire amount of Pacific Cod allocated to those vessels, then NMFS shall reallocate the projected unused amount of Pacific Cod to vessels using the other gear type(s).

Halibut PSC Mortality Caps. The trawl halibut PSC mortality caps for Pacific cod will be no greater than 1,600 mt. The hook-and-line gear halibut PSC mortality cap for Pacific cod will be no greater than 900 mt.

Review. The Council will review this agreement at four (4) years following the date of implementation.

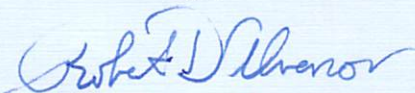
The members of the FVOA will support this outcome to the Council, though we are concerned about the amount of halibut that may be used for the trawl allocations. The halibut mortality of trawl catcher vessels and trawl catcher processors has been increasing over the last five (5) years, based on table 3.7 of the RIR, the amounts are as follows. The total Pacific Cod catch, not including discards, as per Table 3.1 is also provided.

| <u>YEAR</u> | <u>HALIBUT MORTALITY</u> | <u>TRAWL CAUGHT PACIFIC COD</u> |
|-------------|--------------------------|---------------------------------|
| 1992 | 1195 MT | 90,377 |
| 1993 | 1147 MT | 98,844 |
| 1994 | 1245 MT | 99,748 |
| 1995 | 1341 MT | 118,745 |
| 1996 | 1685 MT Allotted | |

The trawl Pacific Cod use of halibut has increased 41% from 1992 to 1996. The negotiated allocations should result in a 13% reduction in halibut mortality requirements for trawl operations on Pacific cod. This savings should be used in the directed Halibut fishery, if at all possible.

In summary, the FVOA will support the cod negotiated percentages, recommends against any mandatory sunset of the allocation, and would like the Council to consider using any reduction in Halibut mortality associated with trawl cod operations to benefit the directed Bering Sea halibut fleet.

Sincerely,



Robert D. Alverson
Manager

RDA:cb

Enclosures

Weekly Production Reports are data sets that list the total amount of each product produced by a processor. While these data are an integral part of the blend data calculation, they are also the source of product information used in this document. A weakness of this study and the WPR data in general, is that shoreside processors and motherships which take deliveries from vessels using different gear types, in a week, do not report the products produced by the gear that was used to harvest the fish. It is reported that processors pay different prices for fish caught with fixed gear versus trawl gear. Because the processor pays more or less for fish based on gear used for the harvest, it is assumed that the fish goes into different products, or products which have different levels of quality. These flows can not be traced back through the WPR data. This makes it impossible to aggregate products by the target fishery definitions in this paper or by harvest vessel classes. Therefore, this paper estimates the amount of product that was produced from each fishery, and the gross revenue attributed to vessel classes that deliver their catch onshore.

3.1.1 Bering Sea/Aleutian Islands Total Catch

This section reports the total catch of Pacific cod in the BSAI for the years 1992-95. Blend data were aggregated to determine the total catch for the longline, pot, trawl catcher vessel, trawl catcher processor fleets, regardless of whether Pacific cod was the target species. These groups, along with the jig fleet, will be directly impacted by any reallocation of the BSAI Pacific cod TAC.

Table 3.1 Total Pacific Cod Catch in all Fisheries

| Year | Metric Tons | | | | | Percent of Pacific Cod Catch | | | | |
|------|-------------|--------|----------|----------|---------|------------------------------|-------|----------|----------|---------|
| | Longline | Pot | Trawl CV | Trawl CP | Total | Longline | Pot | Trawl CV | Trawl CP | Total |
| 1995 | 94,163 | 18,782 | 50,208 | 68,537 | 231,690 | 40.64% | 8.11% | 21.67% | 29.58% | 100.00% |
| 1994 | 87,139 | 8,236 | 43,592 | 56,156 | 195,124 | 44.66% | 4.22% | 22.34% | 28.78% | 100.00% |
| 1993 | 66,153 | 2,098 | 41,045 | 57,799 | 167,095 | 39.59% | 1.26% | 24.56% | 34.59% | 100.00% |
| 1992 | 102,071 | 13,681 | 30,190 | 60,187 | 206,130 | 49.52% | 6.64% | 14.65% | 29.20% | 100.00% |

Description of table: This table reports the metric tons of Pacific cod caught in the years 1992-95 by vessel/gear type. Both retained and discarded catch are included. The percent portion of the table reports the percent of the total Pacific cod caught by each vessel/gear type. For example, in 1995 longline vessels harvested 40.64% of all Pacific cod caught in the BSAI.

Source: NMFS Blend data 1992-95

Longline vessels harvested 94,163 mt of the 231,690 mt of Pacific cod taken from the BSAI in 1995. The longline fleet accounted for 40.64% of the total. Their total catch of cod was lower in 1994 (87,139 mt), but they caught a greater percentage of the BSAI cod (44.66%). Longline vessels typically harvested between 40% and 50% of the BSAI cod between 1992-95.

Vessels harvesting cod with pot gear share the fixed gear portion of the TAC with longliners. Declines in the BSAI crab stocks have prompted pot fishermen to seek out alternatives to their traditional crab fisheries. Cod is the primary groundfish alternative for the pot boats. Increases in cod caught with pot gear are reported in 1995 when compared to the years 1992-94. These increases in pot caught cod reduce the amount available to longline vessels, because they share the fixed gear allocation. In terms of reported catch, the pot fleets cod harvest increased from 8,236 mt in 1994 to 18,782 mt in 1995. Their percent of the total BSAI cod catch also about doubled from 1994 to 1995. The pot fleet caught 4.22% of the cod taken in 1994 and 8.11% in 1995.

Recent growth in the pot fleet's cod harvest has prompted members of industry to request that the available information on the 1996 be included in this document. Anecdotal information presented at the Council's April, 1996 meeting, indicated that the pot cod catch was considerably higher in the first part of 1996 than it was in 1995. To confirm this information the 1996 blend data was queried. As of April 25, 1996, there were 11,905

Halibut mortality has constrained the Pacific cod trawl fleet each year between 1992-95. Hook and line vessels hit their cap in 1995 before their portion of the TAC was taken. Because halibut has constrained both the hook and line and trawl fleets catch of Pacific cod in the past, it is a critical part of the analysis.

Halibut mortality in the Pacific cod hook and line fleet was reported at 799 tons in 1995. The cap for the hook and line fleet was 750 tons in 1995 before halibut was reapportioned. The 1995 mortality was down 247 tons from the 1994 total. A relatively low level (438 tons) was reported in the 1993 hook and line fishery for cod. However in 1992, 1,413 tons were reported.

The pot fishery has small amounts of halibut mortality, and is not constrained by a mortality cap. The reported mortality in 1992 was only 13 tons. They reported no mortality in 1993. Mortality in 1994 was only 5 tons and then increased to 10 tons in 1995. During this same period, their catch of Pacific cod more than doubled, so the ratio of halibut mortality to total catch actually decreased from 1994 to 1995.

Trawl catcher vessels used over 750 tons of halibut mortality in each year between 1992 and 1995. The most halibut mortality occurred in 1994, when 939 tons were reported. Catcher processors halibut mortality was the highest in 1995 when they took 553 tons. In 1994, the catcher processors accounted for 306 tons of halibut mortality.

The right side of Table 3.7 reports the halibut mortality for each industry sector in kilograms of halibut mortality per metric ton of Pacific cod taken in the directed cod fishery. Pot and longline vessels have had lower halibut mortality rates than the trawl sectors between 1992-95. In 1995, the longline fleet averaged 8.5 kg of halibut mortality per metric ton of Pacific cod caught in the directed cod fishery. Pot vessels averaged 0.5 kg/mt in 1995. Both of these rates were considerably lower than those reported for the trawl sectors.

Catcher processor and catcher vessel halibut mortality can also be compared as a ratio to total target catch. The 1995 catcher vessel fleet had 25.7 kilograms of halibut mortality per metric ton of cod catch in the co target fishery in 1995. The catcher processor fleet averaged 19.1 kg/mt. In 1994, the ratio of halibut mortality to cod was 27.4 kg/ton for the catcher vessel fleet. The catcher processor fleet averaged 20.8 kg/mt that year. Therefore, each of the trawl sectors reduced their halibut mortality rate between 1994 and 1995, but the catcher processors continued to have about 7 kg/mt less halibut mortality than the catcher vessels.

Table 3.7 Halibut Mortality in the Pacific Cod Target Fisheries

| Year | Metric Tons | | | | | Kg of Halibut Mortality per mt of Target Pacific Cod | | | | |
|------|-------------|-----|----------|----------|-------|--|-----|----------|----------|------|
| | Longline | Pot | Trawl CV | Trawl CP | Total | Longline | Pot | Trawl CV | Trawl CP | All |
| 1995 | 799 | 10 | 788 | 553 | 2,149 | 8.5 | 0.5 | 25.7 | 19.1 | 12.5 |
| 1994 | 1,046 | 5 | 939 | 306 | 2,296 | 12.0 | 0.6 | 27.4 | 20.8 | 15.9 |
| 1993 | 438 | 0 | 777 | 370 | 1,586 | 6.6 | 0.2 | 26.2 | 14.7 | 12.9 |
| 1992 | 1,413 | 13 | 759 | 436 | 2,621 | 13.9 | 1.0 | 37.9 | 15.6 | 16.0 |

Description of table: This table reports the amount of halibut mortality that was a result of the BSAI Pacific cod fisheries. The left hand side of the table lists the metric tons of halibut mortality. For example, longline vessels accounted for 799 mt of halibut mortality while they were targeting Pacific cod in 1995, and in total, 2,149 metric tons of halibut mortality occurred in the Pacific cod target fisheries. The right hand side of the table show the kilograms of halibut mortality per metric ton of Pacific cod catch in the directed cod fisheries. For example, longline vessels had 8.5 kilograms of halibut mortality per metric ton of Pacific cod caught in the directed longline cod fishery.

Source: Groundfish observer reports 1992-95

Pacific Cod Vessel Survey

II B2
Brant Paine
c-3

35 Vessels

- Shoreside Trawlers (60'-124')
- 2 Shoreside Trawlers (125' and up)
- 5 At-Sea Trawlers (deliver to MS or FT) (60'-124')
- 2 Combination (Shoreside & At-Sea) (60'-124')
- 4 Combination (Shoreside & At-Sea) (125' and up)

PART ONE - GENERAL DESCRIPTION

Annual Fishing Time

- 1 Vessel = 15%
- 6 Vessels = 20%
- 13 Vessels = 25%
- 2 Vessels = 30%
- 1 Vessel = 38%
- 6 Vessels = 40%
- 2 Vessels = 45%
- 4 Vessels = 50%

Avg. = 31% Fish Time

Annual Gross Revenue

- 3 Vessels = 5%
- 3 Vessels = 10%
- 2 Vessels = 12%
- 3 Vessels = 13%
- 10 Vessels = 15%
- 2 Vessels = 20%
- 2 Vessels = 25%
- 1 Vessel = 27%
- 7 Vessels = 30%
- 1 Vessel = 35%
- 1 Vessel = 50%

Avg. = 19% Gross Revenue

Tons of P. Cod Delivered

- 1994 - 18,928
- 1995 - 25,973
- 1996* - 24,569

Trips (inshore)

- 27 Vessels
- 1 Vessel = 1
 - 1 Vessel = 4
 - 1 Vessel = 5
 - 2 Vessels = 8
 - 4 Vessels = 10
 - 3 Vessels = 12
 - 1 Vessel = 13
 - 5 Vessels = 15
 - 9 Vessels = 20

Avg. = 14 trips year

Trips (offshore)

- 7 Vessels
- 1 Vessel = 12
 - 1 Vessel = 15
 - 2 Vessels = 30
 - 1 Vessel = 40
 - 1 Vessel = 45
 - 1 Vessel = 65

Avg. = 34 trips year

Percent Delivered to:

- 3 Vessels = 100% King Cove
- 3 Vessels = 100% Akutan
- 3 Vessels = 100% Beaver Inlet
- 9 Vessels = 100% Dutch Harbor
- 4 Vessels = At-Sea, FTs
 - 1 = 70% FT / 30% MS
- 1 = 5% DH / 47% FT / 48% MS
- 9 = 10% Sand Point / 90% Akutan
- 1 = 10% DH / 90% Beaver Inlet
 - 1 = 95% DH / 5% MS

Pacific Cod Vessel Survey

| PART TWO - EMPLOYMENT | |
|---|--|
| <p>Total employees on vessel while fishing P. Cod 12 Vessels have 4 22 Vessels have 5 1 Vessel has 6</p> | <p>Annual Average Gross Pay Skipper = \$22,500.00 Deck Crew = \$10,000.00</p> |
| <p>Crew Residence Alaska = 30 Oregon = 7 Washington = 127 Elsewhere = 19 <i>11 Vessels are WA crew only</i></p> | |

| PART THREE - EXPENDITURES GOODS/SERVICES | |
|---|---|
| <p>Expenditures (no labor) \$519,000.00</p> | |
| <p>Percentage in Alaska 44%</p> | <p>Percentage in Dutch Harbor 37%</p> |

| PART FOUR - PRODUCT FORM AND PRICES | |
|--|--|
| <p>Percent of Cod Products H&G = 8% fillet block = 40% fillet IQF = 6% fillet shatter = 29% salted cod = 20% fishmeal = 0.60%</p> | <p style="text-align: center;">Prices - Bled</p> <p>1994 = 0.16/lb. 1995 = 0.17/lb. 1996 = 0.15/lb.</p> <hr/> <p style="text-align: center;">Prices - Un-bled</p> <p>1994 = 0.11/lb. 1995 = 0.14/lb. 1996 = 0.12/lb.</p> |

AFTA
C-3

| Findings of a survey of Factory Trawlers targeting Pacific Cod 6/4/96 | | | | H&G | Fillet | Total |
|--|--|--|--|--------------|--------------|--------------|
| General | | | | | | |
| Number of factory trawlers that targeted Pacific cod in 1995 (NMFS data): | | | | 19 | 13 | 32 |
| Average percentage of 1995 fishing days spent fishing for P. cod: | | | | 16% | 35% | |
| Employment | | | | | | |
| Average number of jobs per vessel fishing cod in 1995: | | | | 36 | 89 | |
| Total number of jobs on factory trawlers fishing cod in 1995: | | | | 684 | 1157 | 1841 |
| Number of Western Alaskans employed on FTs fishing cod (1995): | | | | 12 | 21 | 33 |
| Number of female crewmembers fishing cod on factory trawlers in 1995: | | | | 35 | 169 | 204 |
| Percent of female crewmembers working as deck crew, licenced crew, etc.: | | | | 48% | 30% | |
| Income | | | | | | |
| Total crewshare payments for the 32 FTs that targeted cod in 1995: | | | | \$27,971,000 | \$36,125,000 | \$64,096,000 |
| Crewshare payments for fishing cod on factory trawlers in 1995: | | | | \$3,356,521 | \$7,224,971 | \$10,581,492 |
| Crewshare payments for cod as a percentage of total annual crewshare for vessels that targeted cod | | | | 12% | 20% | |
| Expenditures | | | | | | |
| 1995 operating expenditures (excluding labor) for vessels that target cod: | | | | \$33,367,700 | \$60,926,600 | \$94,294,300 |
| 1995 operating expenditures (excluding labor) attributable to cod: | | | | \$5,413,500 | \$19,639,600 | \$25,053,100 |
| 1995 operating expenditures (excluding labor) in Alaska: | | | | \$10,590,000 | \$6,926,400 | \$17,516,400 |
| 1995 operating expenditures (excluding labor) in Alaska (per boat basis): | | | | \$557,368 | \$532,800 | |
| Percent of Alaska expenditures (excluding labor) in Dutch Harbor: | | | | 85% | 95% | |

BSAI Pacific Cod Allocation
Agenda Item C-3
June 12, 1996

[Questions of staff following staff report]

Pennoyer: On the industry agreement, . . . "the hook and line halibut PSC mortality cap for Pacific cod will be no greater than 900 tons." Actually, the fixed gear cap now is 900 tons but includes 100 tons to other fisheries than P. cod. Does this mean that the agreement implies that we'd have 900 for P. cod and still keep the 100 for other species, for a total of 1,000?

Hartley: No, that is not what they meant by that. It was specifically discussed; what they mean by that agreement is that they're not saying that we need to increase the overall fixed gear cap at all, but that no more than 900 for Pacific cod could be set aside. I assume that there is some speculation that maybe there would be at some point a greater amount in the fixed gear apportionment of halibut but that in any case they would not ask for any more than 900 tons. They aren't stipulating that it must be 900 tons, in fact recognize that . . . [someone coughed, couldn't hear] unless, if no additional halibut is set aside for Pacific cod or for fixed gear in a separate amendment, that setting it at 900 would indeed eliminate any other target fisheries that they might have because there's no halibut available for it. They don't anticipate setting it at 900, but that was the maximum that they would ever ask for.

[Dave Hanson invited committee members to the testimony table and made some comments. There were no questions of the committee members.]

Council Discussion/Action

Mace: I move that we adopt the AP recommendation that we adopt the Negotiating Committee's agreement as listed in Agenda item C-3(b) in the June 1996 agenda. [Seconded by Samuelson]

Lauber: Been moved and seconded; is there any discussion?

Benton: One question, and this is for Steve, Mr. Pennoyer. Steve, the September 1 date for the rollover of the jig quota into the fixed gear quota, how do you handle that or how would you handle that under this arrangement.

Pennoyer: The current regulation says "on or about" and I was going to suggest an amendment to that language, not to delay it but to imply as is correct, if the assessment is not done we wait until we're fairly sure. Now that doesn't penalize the rest of the fleet and it isn't much later than that, but it might be September 10th or September 12th, or something like that. We look at what's been taken so far and project the rates and provide a cushion of some amount, . . . I don't think we've had a problem with that. The rates are very slow and it hasn't been a problem so far. But I would suggest amending it to "on or about September 1st" because sometimes by September 1st we don't know exactly; it might be September 10th.

Hanson: The Committee discussed this quite a bit. There's a reason why they didn't put "on or about." On or about, they feel, to NMFS could be about October, or about November. There's somewhat less than perfect confidence it will be perfectly close to September 1. That's why the Committee chose a date. They recognized that NMFS would not be particularly happy with that, and so perhaps if you could bracket it by time or something, rather than 'on or about,' that would give the comfort level. The other issue is there is . . .

Pennoyer: . . . I understand the issue and the intent was not to go to November 1st or something; so, those who thought we would do that, that's fine. I think the jig fishermen might view it in the opposite direction, that we might jump the gun too soon and allocate something away that they want to actually take. So, I still would like on or about with the assurance that we're not going to go to October 1st or November 1st. But if you want to try something like, let's say, September 15. . . I don't care. I'm just concerned that September 1st might be a little bit early to be precise and I'd just as soon release all that we can.

Benton: I'll try this as a friendly amendment. I would move that we change September 1 to September 15. [Seconded by Pennoyer] I think that's pretty self-explanatory; it gives a firm date the fixed gear representatives have testified, said there's not magic in their mind to September 1, and it provides a little bit of a window for the jig fishermen there in the early part of the fall where they could keep participating in their fishery.

Mace: This is a friendly amendment, but before I accept it I'd like to get a reading from Dr. Hanson as to what damage this does to the negotiated settlement.

Hanson: I guess my view, Mr. Chairman, is that this is not, if it's September 15th, is not a problem. The concern is to get it done so that if there's additional rollover there's time to do it when the fish can still be taken. But, my feeling, in looking at the heads nodding, the 15th is not a problem.

Mace: I accept that as a friendly amendment.

Lauber: All right. We have the AP recommendation which is the negotiating team thing with the amended date to September 1 on the rollover. Is there any further discussion? Ready for the question? Is there any objection to the motion? . . . [lost vote on tape changeover but my notes indicate it carried without objection; there doesn't seem to be any more discussion on the following tape]