

MEMORANDUM

TO: Council, SSC and AP Members  
FROM: Clarence G. Pautzke  
Executive Director  
DATE: September 23, 1998  
SUBJECT: Chinook Salmon Bycatch

ESTIMATED TIME  
8 HOURS  
(all D-1 Items)

**ACTION REQUIRED**

Review analysis of amendment to minimize BSAI chinook salmon bycatch, and release for public review.

**BACKGROUND**

The Magnuson-Stevens Act amendments emphasized the importance of bycatch effects on achieving sustainable fisheries. National Standard 9 mandates that conservation and management measures shall, to the extent practicable: (1) minimize bycatch; and (2) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch. To comply with these provisions of the Act, the Council highlighted the need for additional bycatch management measures during the 1997 call for proposals, and initiated development of several proposals received.

(a) Chinook Salmon Bycatch

One of the proposals approved for analysis was a proposal to lower the chinook salmon bycatch limits that trigger a closure of the Chinook Salmon Savings Areas in the Bering Sea. This proposal, submitted by the Yukon River Drainage Fisheries Association, identified that the current bycatch trigger of 48,000 chinook salmon is inadequate and does not reduce chinook salmon bycatch. Additionally, bycatch of chinook salmon after April 15 does not apply towards the PSC limit that triggers a closure.

In April 1998, the Council reviewed a draft analysis, and requested that the analysis be revised to include additional alternatives, including hotspot area closures at the start of the fishing year and an option that the closure would apply only to the pollock fishery. Further, the Council requested that the analysis discuss several issues, including a requirement for 100% observer coverage on vessels over 60' when fishing in the hotspot area, use of vessel monitoring systems on vessels fishing for pollock, accuracy of basket sampling for salmon, measures to ensure accurate enumeration of catch, and possible gear interactions resulting from a hotspot closure. The revised analysis examines the following alternatives:

Alternative 1: No Action. Trawling is prohibited in the Chinook Salmon Savings Areas (CHSSA) through April 15 upon attainment of a bycatch limit of 48,000 chinook salmon in the BSAI.

Alternative 2: Include salmon taken after April 15 toward the bycatch limit of 48,000 chinook salmon. The Chinook Salmon Savings Areas would close upon attainment of the bycatch limit, whenever this would occur. Hence these areas could close, or remained closed, during the pollock 'B' season.

Alternative 3: Reduce the trigger level to 36,000 chinook salmon in the BSAI. Trawling would be prohibited in the Chinook Salmon Savings Areas through April 15 upon attainment of a bycatch limit of 36,000 chinook salmon in the BSAI.

Option 1 (applicable to Alternatives 2 and 3): Seasonally allocate the PSC limit, such that there are separate triggers for the pollock 'A' and 'B' season.

Option 2 (applicable to Alternatives 2 and 3): Begin accounting toward the PSC limit at the start of the 'B' season (currently September 1), with the amount carried over to the next pollock 'A' season.

Alternative 4: Annual closure of specific "hot spot" blocks. These specific blocks are the five contiguous blocks of the current Chinook Salmon Savings Area that in the vicinity of Unimak Island. These have been labeled in the document as 200, 201, 202, 227, 228, and 254. Block 201 has been further subdivided in half east to west and labeled as 997 (the eastern half) and 998 (the western half).

Option 1: Consider a seasonal closure of the selected blocks.

Option 2 (applicable to Alternative 4 and Option 1): The closure would only apply to the pollock fisheries although chinook salmon bycaught in all fisheries would apply toward a cap if in effect.

Alternative 5: Alternative 4 would be combined with Alternatives 1, 2, and 3. A cap would apply to closure of the "hot spot" blocks.

An executive summary of the analysis is attached as Item D-1(a)(1). Dave Ackley (ADF&G) will be on hand to discuss the results of his analysis.

### Executive Summary

The Magnuson-Stevens Act amendments emphasized the importance of bycatch effects on achieving sustainable fisheries. National Standard 9 mandates that conservation and management measures shall, to the extent practicable: (1) minimize bycatch; and (2) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch. This Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis (EA/RIR/IRFA) addresses a proposal to minimize the incidental bycatch of chinook salmon in the groundfish trawl fisheries of the Bering Sea and Aleutian Islands. The following three alternatives were examined:

Alternative 1: No Action. Trawling is prohibited in the Chinook Salmon Savings Areas (CHSSA) through April 15 upon attainment of a bycatch limit of 48,000 chinook salmon in the BSAI.

Alternative 2: Include salmon taken after April 15 towards the bycatch limit of 48,000 chinook salmon. The Chinook Salmon Savings Areas would close upon attainment of the bycatch limit, whenever this would occur. Hence these areas could close, or remained closed, during the pollock 'B' season.

Alternative 3: Reduce the trigger level to 36,000 chinook salmon in the BSAI. Trawling would be prohibited in the Chinook Salmon Savings Areas through April 15 upon attainment of a bycatch limit of 36,000 chinook salmon in the BSAI.

Option 1 (applicable to Alternatives 2 and 3): Seasonally allocate the PSC limit, such that there are separate triggers for the pollock 'A' and 'B' season.

Option 2 (applicable to Alternatives 2 and 3): Begin accounting towards the PSC limit at the start of the 'B' season (currently September 1), with the amount carried over to the next pollock 'A' season.

Alternative 4: Annual closure of specific "hot spot" blocks. These specific blocks are the five contiguous blocks of the current Chinook Salmon Savings Area that in the vicinity of Unimak Island. These have been labeled in the document as 200, 201, 202, 227, 228, and 254. Block 201 has been further subdivided in half east to west and labeled as 997 (the eastern half) and 998 (the western half).

Option 1: Consider a seasonal closure of the selected blocks.

Option 2 (applicable to Alternative 4 and Option 1): The closure would only apply to the pollock fisheries although chinook salmon bycaught in all fisheries would apply toward a cap if in effect.

Alternative 5: Alternative 4 would be combined with Alternatives 1, 2, and 3. A cap would apply to closure of the "hot spot" blocks.

Analysis of 1994-1997 observer data indicate that, regardless of season or year, the large majority of chinook salmon have been intercepted in the CHSSA. In the four years examined, the 48,000 cap was reached twice, and the 36,000 cap would have been reached in three of the four years. A 36,000 cap would have reduced the total number of chinook taken by 7% to 28% (3,000 to 18,000 salmon depending on the year and given low bycatch outside the CHSSA).

An accounting year beginning September 1, as suggested by Option 2, would better agree with the biology of the salmon in the Bering Sea. This is because juvenile salmon (those primarily taken as bycatch) enter the Bering Sea to feed in the autumn and remain through the winter, later moving to other areas in the summer. If Option 2 had been in place, the 48,000 chinook cap would have been reached in one of the five years (4 accounting years) examined. In the 1997-1998 accounting year, both the 36,000 cap and the 48,000 caps would have been reached 1/31/98 and 2/21/98, respectively. The potential cost of adopting Option 2 would be that chinook salmon taken in the 'B' season could impact the 'A' season by closing the CHSSA, an area that accounts for a relatively large portion of the 'A' season pollock catch. Most of the pollock catch has been taken from the CHSSA during the 'A' season, but in the 'B' season, most of the pollock catch comes from outside the CHSSA.

The analysis also indicated that the current CHSSA could be modified slightly. There tends to be high bycatch in the vicinity of the Pribilof Islands, but bycatch within specific blocks is not consistent. It appears from recent data that the two block area near the Pribilof Islands have not had high bycatch rates of chinook salmon. Hence, these two blocks could be removed from the CHSSA. Alternatively, additional blocks, one which is made up mostly of land on Unimak Island, showed consistently high bycatch of chinook salmon. Consideration should be given to adding this block, or perhaps other blocks, to the CHSSA.

A simulated closure of the various cells (Alternative 4) in different combinations caused variations in the bycatch patterns in the remaining open cells. In the pollock fisheries, with the exception of 1995 when few chinook salmon were bycaught, the closure of any combination of cells resulted in reductions in predicted chinook salmon bycatch, with greater reductions coincident with larger total area closures (more cells included in the closure). Closures of the areas generally caused reductions in the bycatch of herring, slight increases in the bycatch of halibut, moderate increases in chum salmon bycatch, and large increases in crab bycatch. The closure of the cells to all trawling further reduced the predicted levels of chinook salmon bycatch. However, because greater amount of effort is directed into open areas, the closures to all trawling greatly increased the percentage of crab bycatch of all species but generally reduced halibut bycatch levels.

Benefits of minimizing chinook salmon bycatch would accrue to those fishermen who target chinook salmon and sport and subsistence users of this resource. The most restrictive alternative (among the first three, or Alternative 3) would reduce total chinook bycatch in trawl fisheries by 3,000 - 18,000 salmon. It was estimated that the total benefits to western Alaska commercial salmon fishermen would be in the range of \$27,000 to \$162,000, but the benefits to subsistence and sport users have not been estimated. Simulation results estimated reductions of up to 50% by closing the six cells for the entire year. Options which were seasonal or of smaller total area reduced savings in chinook.

The costs associated with Alternatives 2 and 3 are due to potential forgone catch, reduced CPUE, and operational costs of moving. Fishermen try to fish in areas and ways they can maximize the

returns on their capital; hence, forcing them to fish in non-optimal areas could result in lower CPUE and other costs. These costs could not be quantified in this analysis. The simulation results indicated that if the closures were made to all trawling, increased crab bycatch would occur thus increasing bycatch costs.

None of the alternatives are expected to have a significant impact on endangered, threatened, or candidate species, and none of the alternatives would affect takes of marine mammals. Actions taken to control chinook salmon bycatch in BSAI trawl fisheries will not alter the harvest of groundfish, but will reduce the incidental bycatch of juvenile chinook salmon.

None of the alternatives is expected to result in a "significant regulatory action" as defined in E.O. 12866.

None of the alternatives are likely to significantly affect the quality of the human environment, and the preparation of an environmental impact statement for the proposed action is not required by Section 102(2)(C) of the National Environmental Policy Act or its implementing regulations.